Quality of Surface Waters of the United States 1955

Parts 1-4. North Atlantic Slope Basins to St. Lawrence River Basin

Prepared under the direction of S. K. LOVE, Chief, Quality of Water Branch

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Delaware, Florida, Georgia, Kentucky, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, Wisconsin, the Ohio River Valley Water Sanitation Commission in the States of Illinois, Indiana, and West Virginia, and with other agencies.

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QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1955

PARTS 1-4

INTRODUCTION

The quality-of-water investigations of the United States Geological Survey are concerned with chemical and physical characteristics of the surface and ground water supplies of the l¹ation. Most of the investigations carried on in cooperation with States and other Federal agencies deal with the amounts of matter in solution and in suspension in streams.

The records of chemical analysis, suspended sediment, and temperature for surface waters given in this volume serve as a basis for determining the suitability of the waters examined for industrial, agricultural, and domestic uses insofar as such use is affected by the dissolved or suspended mineral matter in the waters. The discharge of a stream and, to a lesser extent, the chemical quality are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during the periods of high flow than during periods of low flow. The concentration in some streams may change materially with relatively small variations in flow, whereas for other streams the quality may remain relatively uniform throughout large ranges in discharge. The quantities of suspended sediment carried by streams are also related to discharge, and during flood periods the sediment concentrations in many streams vary over wide ranges.

The regular yearly publication of records of chemical analyses, suspended sediment, and water temperature was begun by the Geological Survey in 1941. The annual records prior to 1948 were published in a single volume for the entire country. Beginning in 1948, the records were published in two volumes, and beginning in 1950, in four volumes, covering the drainage basins shown in figure 1. The samples for which data are given were collected from October 1, 1954, to September 30, 1955. Descriptive statements are given for each sampling station for which regular series of chemical analyses, temperature observations, or sediment determinations have been made. These statements include the location of the stream-sampling station, drainage area, length of time for which records are available, extremes of dissolved solids, hardness, sediment loads, water temperature, and

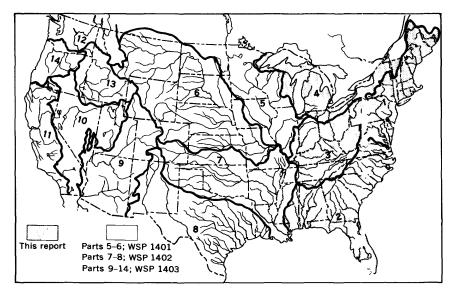


Figure 1. Map of the United States showing basins covered by the four water-supply papers on quality of surface waters in 1955. The shaded portion represents the section of the country covered by this volume; the unshaded portion represents the section of the country covered by other water-supply papers.

other pertinent data. Records of water discharge of the streams at, or near, the sampling point for the sampling period are included in most tables of analyses. The records are arranged by drainage basins, according to Geological Survey practice in reporting records of stream flow.

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing station records was changed. In this report, stations on tributary streams are listed between stations on the main stream in the order in which those tributaries enter the main stem. Stations on tributaries to tributaries are inserted in a similar manner.

During the year ended September 30, 1955, 213 regular sampling stations on 144 streams for the study of the chemical character of surface waters were maintained by the Geological Survey in the area covered by this volume. Samples were collected less frequently during the year at many other points. Water temperatures were measured daily at 147 of the regular sampling stations. Not all analyses of samples of surface water collected during the year have been included. Single analyses of an incomplete nature generally have been omitted. Also, determinations made on the

daily samples before compositing have not been reported. Specific conductance was usually determined on each daily sample, and as noted in the table headings this information is available for reference at the district offices listed under Division of Work, on page 19.

Quantities of suspended sediment are reported for 44 tions during the year ended September 30, 1955. The sediment samples were collected one or more times daily at most stations, depending on the rate of flow and changes in stage of the stream. Sediment samples were collected less frequently during the year at many other points. In connection with measurements of sediment discharge, sizes of sediment particles were determined at of the stations. As noted under "Remarks" in the table headings, suspended-sediment concentrations also were determined from the samples collected for chemical analyses in some parts of the country. The data do not provide a reliable basis for computing the loads of suspended sediment carried by the stream but may be of value for design and operation of filtration plants utilizing these stream waters. Records of these infrequert determinations are available for reference in the district offices listed.

Material which is transported essentially in continuous contact with the stream bed and the material that bounces along the bed in short skips or leaps is termed bed load and is not considered in this report. All other undissolved fragmental material in transport is termed suspended sediment and generally constitutes the major part of the total sediment load. At the present time no reliable method has been developed for determining bed load on a routine basis.

COLLECTION AND EXAMINATION OF SAMPLES

CHEMICAL QUALITY

Samples of chemical analyses were usually collected at or near points on streams where gaging stations are maintained for measurement of water discharge. Two methods of compositing samples for analysis are used in Geological Survey Laboratories: (1) Equal volume method-For streams, mostly east of the Mississippi River, not subject to rapid and large fluctuations in chemical composition or concentration, three composite samples were usually prepared each month by mixing together equal volumes of daily samples collected from the 1st to the 10th, from the 11th to the 20th, and during the remainder of the month. Samples were sometimes composited for shorter periods on the basis of the concentration of dissolved solids as indicated by measurements of specific conductance of the daily samples.

(2) Discharge method-Composites based on discharge consist of a volume taken from each sample in proportion to the product of the rate of water discharge when the sample was collected and the length of time the sample represents. With this method usually each daily sample was assumed to represent an equal time and the volumes composited were taken in proportion to the rates of discharge when the samples were collected.

The samples were analyzed according to methods regularly used by the Geological Survey. These methods are essentially the same as or are modifications of methods described in recognized authoritative publications for the mineral analysis of water samples (Collins, 1928; Am. Public Health Assoc., 1946).

The value usually reported as dissolved solids is the residue on evaporation after drying at 180°C for 1 hour. For some waters particularly those containing moderately large quantities of soluble salts, the value reported is the sum of the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. The sum of the constituents may be given instead of or in addition to the residue. Specific conductance is is given for most analyses and was determined by means of a conductance bridge using a standard potassium chloride solution as reference.

SEDIMENT

In general, suspended-sediment samples were collected daily with U.S. depth-integrating cable-suspended samplers (U.S. Interagency, 1948, p. 70-76 and U. S. Interagency, 1952, p. 86-90) from a fixed sampling point at one vertical in the cross section. The US DH-48 hand sampler was used at many stations during periods of low flow. Suspended-sediment samples, consisting of depth-integrated samples at three or more verticals in the cross section, were made periodically to determine the cross-sectional distribution of the suspended concentration with respect to that at the daily sampling vertical. In streams where transverse distribution of sediment concentration ranges widely, samples were taken regularly at two or more verticals to determine the average concentration across the section. During periods of high flow, samples were taken two or more times throughout the day at many sampling stations, and during periods of rapidly changing flow samples were taken hourly at some stations.

Sediment concentrations were determined by filtration or evaporation of the samples as required. At many stations the daily mean concentration for some days was obtained by plotting the instantaneous concentrations on the original or copies of the original

gage-height chart. The plotted concentrations adjusted, if necessary, for cross-sectional distribution with respect to that at the daily sampling vertical, were connected or averaged by continuous curves to obtain a concentration graph. This graph represented the estimated concentration at any time and, for most periods, daily mean concentrations were determined from the graph. When the concentration and water discharge were changing rapidly, the day was often subdivided for this computation. For some periods when the day-to-day variation in the concentration was negligible, the data were not plotted, and the average concentration of the samples was used as the mean concentration for the day. For certain stations, when the discharge and concentrations were relatively low and varied only slightly from day to day, the samples for a number of days were composited and the mean daily concentrations and mean daily loads are shown.

For some periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately preceding and following the periods, and suspended-sediment loads for other periods of similar discharge. The estimates were further guided by weather conditions and sediment discharge for other stations.

In many instances where there were no observations for several days, the suspended-sediment loads for individual days are not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in otherwise continuous period of sampling have been included in monthly and annual totals for most streams to provide a complete record.

In addition to the records of quantities of suspended sediment transported, records of the particle sizes of sediment are included also. The particle sizes of the suspended sediments for many of the stations, and the particle sizes of the bed material for some of the stations were determined periodically. As much of the material carried in suspension is finer than 0.062 mm, the pipette method, (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U. S. Interagency, 1943, p. 82-90) were used in most of the analyses. Size fractions between 1.000 mm and 0.062 mm were usually analyzed by the visual accumulation tube method (U. S. Interagency 1957). Separations between sand and silt-clay sizes and some analyses of all sediment coarser than 0.062 mm were made by sieve analysis. Native or distilled water, as noted in the tables of analyses, was used as the settling medium. In some instances, chemical dispersing agents were added to the settling medium. In some instances, chemical dispersing agents were added to the settling medium. As settling diameters of the clay and colloidal fractions are often affected by the chemical character of the

settling medium, analyses made using native water may more nearly simulate particle sizes existing in the stream. Pesults of analyses using distilled water or using a settling medium containing dispersing agents approximate ultimate particle sizes of the finer fractions. The concentration of sediment suspension for analysis was reduced to less than 5,000 parts per million, where necessary, by means of a sample splitter, in order to stay within limits recommended for the bottom-withdrawal tube or pipette method. The concentration of suspended sediment used in the bottom-withdrawal tube or pipette cylinder was often different from the concentration in the original suspension. The concentration at which analyses were made is indicated in the appropriate tables.

TEMPERATURE

For most of the stations, daily water temperatures were obtained at the time that the chemical quality or sediment samples were collected. So far as practicable the water temperatures were observed at about the same time each day for an individual river station in order that the data would be relatively unaffected by diurnal variations in temperature. For most large, swiftly flowing streams the diurnal variation in water temperature is probably small, but for sluggish or shallow streams the daily range in temperature may amount to several degrees and may follow closely changes in air temperature. The thermometers used for determination of water temperature were accurate to plus or minus about $0.5^{\circ} \, F$.

Records of thermograph observations consist of maximum and minimum temperatures for each day, and the monthly averages of the maximum daily and minimum daily temperatures.

EXPRESSION OF RESULTS

The dissolved mineral constituents are reported in parts per million. A part per million is a unit weight of a constituent in a million unit weights of water. Equivalents per million are not given in this report although the expression of analyses in equivalents per million is sometimes preferred. An equivalent per million is a unit chemical combining weight of a constituent in a million unit weights of water. Equivalents per million are calculated by dividing the concentration in parts per million by the chemical combining weights of the individual constituents. For corvenience

in making this conversion the reciprocals of chemical combining weights of the most commonly reported constituents (ions) are given in the following table:

Constituent	Factor	Constituent	Factor
Iron (Fe ⁺⁺)	.0537 .0499 .0822 .0435	Carbonate (CO ₃)0 Bicarbonate (HCO ₃ ⁻). Sulfate (SO ₄) Chloride (Cl ⁻) Fluoride (F ⁻)	.0164 .0208 .0282 .0526
rotassium (K.)	.0230	Nitrate (NO ₃ -)	.0101

Results given in parts per million can be converted to grains per United States gallon by dividing by 17.12. A calculated quantity of sodium and potassium is given in some analyses and is the quantity of sodium needed in addition to the calcium and magnesium to balance the acid constituents.

The hardness, as calcium carbonate (CaCO₃), is calculated from the equivalents of calcium and magnesium, or is determined by direct titration. The hardness caused by calcium and magnesium (and other ions if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness ir excess of this quantity is called noncarbonate hardness.

In the analyses of most waters used for irrigation, the quantity of dissolved solids is given in tons per acre-foot as well as in parts per million. Percent sodium is computed for those analyses where sodium and potassium are reported separately by dividing the equivalents per million of sodium by the sum of the equivalents per million of calcium, magnesium, sodium, and potassium and multiplying the quotient by 100. In analyses where sodium and potassium were calculated and reported as a combined value, the value reported for percent sodium will include the equivalent quantity of potassium. In most waters of moderate to high concentration, the proportion of potassium is much smaller than that of sodium.

Specific conductance values are expressed in reciprocal ohms per centimeter times 10 6 (micromhos per cm at 25°C). The discharge of the streams is reported in cubic feet per second (see Streamflow, p. 24). and the temperature in degrees Fahrenheit. Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892, p. 427-428). Hydrogen-ion concentration is expressed in terms of pH units. By definition the pH value of a solution is the negative logarithm of the concentration of gram ions of hydrogen. However, the pH meter which is generally used in Survey laboratories, determines the activity of the hydrogen ions as distinguished from concentration.

An average of analyses for the water year is given for most daily sampling stations. Most of these averages are arithmetical or time-weighted; when analyses during a year are all on 10-day composites of daily samples with no missing days, the arithmetical and time-weighted averages are equivalent. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the river each day for the water year. The dischargeweighted average reported for some station approximates the composition of water that would be found in a reservoir containing all of the water passing a given station during the year after thorough mixing in the reservoir. A discharge-weighted average is computed by multiplying the discharge for the sampling period by the concentrations of the individual constituents for the corresponding period and dividing the sum of the products by the sum of the dis-Discharge-weighted averages are usually lower than arithmetical averages for most streams because at times of high discharge the rivers generally have lower concentrations of dissolved solids.

The concentration of sediment in parts per million is computed as 1,000,000 times the ratio of the weight of sediment to the weight of water-sediment mixture. Daily sediment loads are expressed in tons per day and except for subdivided days are usually obtained by multiplying daily mean sediment concentration in parts per million by the daily mean discharge, and the appropriate conversion factor, normally 0.0027.

Particle-size analyses are expressed in percentages finer than indicated sizes in millimeters. The size classification used in this report is that recommended by the American Geophysical Union Subcommittee on sediment terminology (Lane, et al; 1947, p. 937). Other data included as pertinent to the size analyses for many streams are the date of collection, the stream discharge and sediment concentration when sample was collected, the concentration of the suspension during analysis, and the method of analysis.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. Water in contact with soils or rock, even for only a few hours, will dissolve some rock materials. The quantity of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils through which the water has passed and the length of time it has been in contact with the rocks or soils. Some streams are fed by both surface runoff and underground water from springs or

seeps. Such streams reflect the chemical character of their concentrated underground sources during dry periods and are more dilute during periods of heavy rainfall. Underground water is usually more highly concentrated than surface runoff as it remains in contact with the rocks and soils for much longer periods. The concentration of dissolved solids in a river water is frequently increased by drainage from mines or oil fields, by the addition of industrial or municipal wastes, or—in irrigated regions—by return drain waters.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on the value of the waters for most purposes. The analyses generally include results for silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together as sodium), bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, and dissolved solids. Aluminum, manganese, color, acidity, oxygen consumed, and other dissolved constituents and physical properties are reported for certain streams. The source and significance of the different constituents and properties of natural waters are discussed in the following paragraphs.

MINERAL CONSTITUENTS IN SOLUTION

Silica (SiO₂)

Silica is dissolved from practically all rocks. Some natural surface waters contain less than 5 parts per million of silica and few contain more than 50 parts, but the more common range is from 10 to 30 parts per million. Silica affects the usefulness of a water because it contributes to the formation of boiler scale; it usually is removed from feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines.

Aluminum (Al)

Aluminum is usually present only in negligible quartities in natural waters except in areas where the waters have been in contact with the more soluble rocks of high aluminum content such as bauxite and certain shales. Acid waters often contain large amounts of aluminum. It may be troublesome in feed waters where it tends to be deposited as a scale on boiler tubes.

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. Waters impounded in large reservoirs may contain manganese that has been dissolved from the mud on the bottom of the reservoir by action of carbon dioxide produced by anaerobic fermentation of organic matter. Manganese is not regularly determined in areas where it is not present in the waters in appreciable amounts. It is especially objectionable in water used in laundry work and in textile processing. Concentrations as low as 0.2 part per million may cause a dark-brown or black stain on fabrics and porcelain fixtures. Appreciable quantities of manganese are often found in waters containing objectionable quantities of iron.

Iron (Fe)

Iron is dissolved from many rocks and soils. On exposure to the air, normal basic waters that contain more than 1 part per million of iron soon become turbid with the insoluble reddish ferric oxide produced by oxidation. Surface waters, therefore, seldom contain as much as 1 part per million of dissolved iron, although some acid waters carry large quantities of iron in solution. Iron causes reddish-brown stains on white porcelain or enameled ware and fixtures and on fabrics washed in the water.

Calcium (Ca)

Calcium is dissolved from practically all rocks and soils, but the highest concentrations are usually found in waters that have been in contact with limestone, dolomite, and gypsum. Calcium and magnesium make water hard and are largely responsible for the formation of boiler scale. Most waters associated with granite or silicious sands contain less than 10 parts per million of calcium; waters in areas where rocks are composed of dolomite and limestone contain from 30 to 100 parts per million; and waters that have come in contact with deposits of gypsum may contain several hundred parts per million.

Magnesium (Mg)

Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effect in water is similar to that of calcium. The magnesium in softwaters may amount to only 1 or 2 parts

per million, but water in areas that contain large quantities of dolomite or other magnesium-bearing rocks may contain from 20 to 100 parts per million or more of magnesium.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 parts per million of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these constituents increases, the proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but waters that carry more than 50 or 107 parts per million of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Carbonate and bicarbonate (CO₃ and HCO₃)

Bicarbonate occurs in waters largely through the action of carbon dioxide, which enables the water to dissolve carbonates of calcium and magnesium. Carbonate as such is not usually present in appreciable quantities in natural waters. The bicarbonate in waters that come from relatively insoluble rochs may amount to less than 50 parts per million; many waters from limestone contain from 200 to 400 parts per million. Bicarbonate in moderate concentrations in water has no effect on its value for most uses. Bicarbonate or carbonate is an aid in coagulation for the removal of suspended matter from water.

Sulfate (SO₄)

Sulfate is dissolved from many rocks and soils—in especially large quantities from gypsum and from beds of shale. It is formed also by the oxidation of sulfides of iron and is therefore present in considerable quantities in waters from mines. Sulfate in waters that contain much calcium and magnesium causes the formation of hard scale in steam boilers and may increase the cost of softening the water.

Chloride (C1)

Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may contain several hundred parts per million of chloride leached from soils and rocks, especially where the streams receive return drainage from irrigated lands or are affected by ground-water-inflow carrying appreciable quantities of chloride. Large quantities of chloride may affect the industrial use of water by increasing the corrosiveness of waters that contain large quantities of calcium and magnesium.

Fluoride (F)

Fluoride has been reported as being present in some rocks to about the same extent as chloride. However, the quantity of fluoride in natural surface waters is ordinarily very small compared to that of chloride. Recent investigations indicate that the incidence of dental caries is less when there are small amounts of fluoride present in the water supply than when there is none. However, excess fluoride in water is associated with the dental defect known as mottled enamel if the water is used for drinking by young children during calcification or formation of the teeth (Dean, 1936, p. 1269-1272). This defect becomes increasingly noticeable as the quantity of fluoride in water increases above 1.5 to 2.0 parts per million.

Nitrate (NO₃)

Nitrate in water is considered a final oxidation product of nitrogenous material and in some instances may indicate previous contamination by sewage or other organic matter. The quantities of nitrate present in surface waters usually amount to less than 5 parts per million (as NO_3) and have no effect on the value of the water for ordinary uses.

It has been reported that as much as 2 parts per million of nitrate in boiler water tends to decrease intercrystalline cracking of boiler steel. Studies made in Illinois indicate that ritrates in excess of 70 parts per million (as NO₃) may contribute to methemoglobinemia ("blue babies") (Faucett and Miller, 1946, p. 593), and more recent investigations conducted in Ohio show that drinking water containing nitrates in the range of 44 to 88 parts per million or more (as NO₃) may be the cause of methemoglobinemia in infants (Waring, 1949). In a report published by the National Re-

search Council, Maxcy (1950, p. 271) concludes that a nitrate content in excess of 44 parts per million (as NO₃) should be regarded as unsafe for infant feeding.

Boron (B)

Boron in small quantities has been found essential fcr plant growth, but irrigation water containing more than 1 part per million boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids

The reported quantity of dissolved solids—the residue on evaporation—consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and vater of crystallization. Waters with less than 500 parts per million of dissolved solids are usually satisfactory for domestic and some industrial uses. Waters containing several thousand parts per million of dissolved solids are sometimes successfully used for irrigation where practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands.

PROPERTIES AND CHARACTERISTICS OF WATER

Oxygen consumed

The value for oxygen consumed furnishes an approximation of the oxidizable matter in the unfiltered and filtered samples and gives a partial measure of polluting materials such as sewage and oxidizable industrial wastes. Naturally highly colored waters may have relatively high oxygen consumed, although waters that are not noticeably colored may contain oxidizable material.

Color

In water analysis the term "color" refers to the appearance of water that is free from suspended solids. Many turbid waters that appear yellow, red, or brown when viewed in the stream show very little color after the suspended matter has been removed.

The yellow-to-brown color of some waters is usually caused by organic matter extracted from leaves, roots, and other organic substances in the ground. In some areas objectionable color in water results from industrial wastes and sewage. Clear deep water may appear blue as the result of a scattering of sunlight by the water molecules. Water for domestic use and some industrial uses should be free from any perceptible color. A color less than 10 units usually passes unnoticed. Some swamp waters have natural color of 200 to 300 units or more.

Hydrogen-ion concentration (pH)

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH, is related to the corrosive properties of water, and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH value of 7.0 indicates that the water is neither acid nor alkaline. Waters having pH values progressively lower than 7.0 denote increasing acidity, whereas values progressively higher than 7.0 denote increasing alkalinity (see p. 7). The pH of most natural surface waters ranges between 6 and 8. Some alkaline surface waters have pH values greater than 8.0, and waters containing free mineral acid usually have pH values less than 4.5.

Specific conductance (micromhos per centimeter at 25°C)

The specific conductance of a water is a measure of its capacity to conduct a current of electricity. The conductance varies with the concentration and degree of ionization of the different minerals in solution and with the temperature of the water. When considered in conjunction with results of determinations for other constituents, specific conductance is a useful determination and plays an important part in indicating changes in concentration of the total quantity of dissolved minerals in surface waters. (See p. 7.)

Hardness

Hardness is the characteristic of water that receives the most attention in industrial and domestic use. It is usually recognized by the increased quantity of soap required to produce lather. The use of hard water is also objectionable because it contributes to the formation of scale in boilers, water heaters, radiators, and pipes, with the resultant decrease in rate of heat transfer, possibility of boiler failure, and loss of flow.

Hardness is caused almost entirely by compounds of calcium and magnesium. Other constituents--such as iron, manganese, aluminum, barium, strontium, and free acid--also cause hardness, although they usually are not present in quantities large enough to have any appreciable effect. Water that has less than 60 parts per million of hardness is usually rated as soft and suitable for many purposes without further softening. Waters with hardness ranging from 61 to 120 parts per million may be considered moderately hard, but this degree of hardness does not seriously interfere with the use of water for many purposes except for use in high-pressure steam boilers and in some industrial processes. Waters with hardness ranging from 121 to 200 parts per million are considered hard, and laundries and industries may profitably soften such supplies. Water with hardness above 200 parts per million usually requires some softening before being used for most purposes.

Total acidity

The total acidity of a natural water represents the content of free carbon dioxide, mineral acids, and salts--especially sulfates of iron and aluminum-- that hydrolyze to give hydrogen ions. Acid waters are very corrosive and generally contain excessive amounts of objectionable constituents, such as iron, aluminum, and manganese.

Corrosiveness

The corrosiveness of a water is that property which makes the water aggressive to metal surfaces and frequently results in the appearance of the "red water" caused by solution of iron. The disadvantages of iron in water have been discussed previously. Additionally, corrosion causes the deterioration of water pipes, steam boilers, and water-heating equipment. Many waters that do not appreciably corrode cold-water lines will aggressively attack hotwater lines. Oxygen, carbon dioxide, free acid, and acid-generating salts are the principal constituents in water that cause corrosion. In a general way, very soft waters of low mineral content tend to be more corrosive than hard waters containing appreciable quantities of carbonates and bicarbonates of calcium and magnesium.

Percent sodium

Percent sodium is reported in most of the analyses of waters collected from streams in the western part of the country where

irrigation is practiced extensively. The proportion of sodium to all the basic constituents in the water has a bearing on the suitability of a water for irrigation. (See p. 7.) Waters in which the percent sodium is more than 60 may be injurious when applied to certain types of soils, particularly when adequate drainage is not provided (Magistad and Christiansen, 1944, p. 8-9; Wilcox, 1948, p. 6).

Sodium-adsorption-ratio

The U. S. Salinity Laboratory Staff (1954) introduced the term sodium-adsorption-ratio (SAR), a ratio for irrigation waters and soil extracts used to express the relative activity of scdium ions in exchange reactions with the soil. This ratio is expressed by the equation:

$$SAR = \frac{Na^{+}}{\frac{Ca^{++} + Mg^{++}}{2}}$$

where the concentrations of the ions are expressed in milliequivalents per liter (or equivalents per million for most irrigation waters). It has more significance than percent sodium for use as an index of the sodium or alkali hazard of the water because it relates more directly to the adsorption of sodium by the soil.

Waters are divided into four classes with respect to sodium or alkali hazard: low, medium, high, and very high, depending upon the SAR value and the specific conductance. At a conductance of 100 micromhos per centimeter the dividing points are at SAR values of 10, 18, and 26, but at 5,000 micromhos the corresponding dividing points are at SAR values of approximately 2.5, 6.5, and 11. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

SEDIMENT

Fluvial sediment is generally regarded as that sediment which is transported by, suspended in, or deposited by water. Suspended sediment is that sediment which remains in suspension in water owing to the upward components of turbulent currents or by colloidal suspension. Most fluvial sediment results from the normal process of erosion, which in turn is part of the geologic cycle of rock transformation. In some instances, this normal process

Geological Survey reports containing analyses of surface-water samples collected prior to 1941 are listed below. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface-waters are not included. Publications that are out of print are preceded by an asterisk.

PROFESSIONAL PAPER

*135. Composition of river and lake waters of the United States, 1924.

BULLETINS

- *479. The geochemical interpretation of water analyses, 1911.
 - 770. The data of geochemistry, 1924.

WATER-SUPPLY PAPERS

- *108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904.
- *161. Quality of water in the upper Ohio River basin and at Erie, Pa., 1906.
- *193. The quality of surface waters in Minnesota, 1907.
- *236. The quality of surface waters in the United States, Part 1,
 Analyses of waters east of the one hundredth meridian,
 1909.
- *237. The quality of the surface waters of California, 1910.
- *239. The quality of the surface waters of Illinois, 1910.
- *273. Quality of the water supplies of Kansas, with a preliminary report on stream pollution by mine waters in southeastern Kansas, 1911.
- *274. Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses, 1911.
- *339. Quality of the surface waters of Washington, 1914.
- *363. Quality of the surface waters of Oregon, 1914.
- *418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.
- *596-B. Quality of water of Colorado River in 1925-26, 1928.
- *596-D. Quality of water of Pecos River in Texas, 1928.
- *596-E. Quality of the surface waters of New Jersey, 1928.

may have been accelerated by agricultural practices. Sediment also results from a number of industrial activities. In certain sections, waste materials from mining, logging, oil-field, and other industrial operations introduce large quantities of suspended as well as dissolved material.

The quantity of sediment, transported or available for transportation, is affected by climatic conditions, form or nature of precipitation, vegetal cover, topography, and land use. An important property of fluvial sediment is the fall velocity of the particles in transport. Particle sizes, as determined by various methods, represent mechanical diameters, which are related to sedimentation diameters indirectly. Sediment particles in the sand-size (larger than 0.062 mm) range do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. The sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the degree of flocculation present, time in transport, and characteristics of the transporting flow. The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

PUBLICATIONS

Reports giving chemical analyses, suspended-sediment loads, and water temperatures of samples of surface water made by the Geological Survey have been published yearly since 1941. Fecords for many of the stations listed in this report for the water years ending September 30, 1941-1955 are listed below:

Numbers of water-supply papers containing records for Parts 1-4 1941-55

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1945	1030	1949	1162	1953	1290
1942	950	1946	1050	1950	1186	1954	1350
1943	970	1947	1102	1951	1197.	1955	1400
1944	1022	1948	1132	1952	1250		

State	Cooperating agency	Drainage basin	District office	1
Delaware	Newcastle County Soil Conservation District, Marvin W. Klair, chairman Delaware Geological Survey University of Delaware Department of Geology and Geography, Dr. Johan J. Groot, State Geologist.	North Atlantic slope	Room 1302 U. S. Custom House, 2nd and Chestnut Streets, Phila- delphia 6, Pa.	
Florida	Florida Geological Survey, Herman Gunter, director Central and Southern Florida Flood Control District, W. Turner Wallis, secretary. City of Pensacola, O. J. Semmes, Jr., City Manager.	South Atlantic slope and Eastern Gulf of Mexico.	P. O. Box 607 Ocala, Fla.	, <u></u> ,
Georgia	Department of Mines, Mining and Geology, Garland Peyton, director.			
Illinois	Ohio River Walley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer.	Ohio River	2822 E. Main Street Columbus 9, Ohio	

- *636-A. Quality of water of the Colorado River in 1926-28, 1930.
- *636-B. Suspended matter in the Colorado River in 1925-28, 1930.
- *638-D. Quality of water of the Colorado River in 1928-30, 1932.
- *839. Quality of water of the Rio Grande basin above Fort Quitman, Tex., 1938.
- *889-E. Chemical character of surface water of Georgia, 1944.
- *998. Suspended sediment in the Colorado River, 1925-41, 1947.
- 1048. Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939-40, 1948.
- 1110-C. Quality of water of Conchas Reservoir, New Mexico, 1939-49, 1952.

Many of the reports listed are available for consultation in the larger public and institutional libraries. Copies of Geological Survey publications still in print may be purchased at a nominal cost from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, upon request, furnish lists giving prices.

COOPERATION

The table on p. 20 lists State and local agencies that cooperated in quality-of-water investigations in the drainage basins included in this volume. The locations of quality-of-water district offices responsible for the data collected in the drainage basins are given in the table, also.

In addition to these cooperative programs, many of the stations were operated from funds appropriated directly to the Geological Survey for quality-of-water investigations.

Assistance in collecting records was given by many muricipal, State, and Federal agencies.

DIVISION OF WORK

The quality-of-water program was conducted by the Water Resources Division of the Geological Survey, Carl G. Paulsen, chief hydraulic engineer, and S. K. Love, chief of the Quality of Water Branch. The records were collected and prepared for publication under the supervision of district chemists as follows: In Georgia, and Florida, Eugene Brown; in North Carolina and South Carolina, G. A. Billingsley; in Virginia, M. E. Schroeder; in Illinois, Indiana, Kentucky, Ohio, West Virginia, and Wisconsin, W. L. Lamar; in Delaware and Pennsylvania, N. H. Beamer; and in New York and New England, F. H. Pauszek. Any additional information on file can be obtained by writing the responsible Survey district office.

State	Cooperating agency	Drainage basin	District office
Indiana	Ohio River Valley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer	Ohio River	2822 E. Main Street Columbus 9, Ohio
Kentucky	Agricultural and Industrial Development Board, Joseph H. Taylor, executive director.		
New York	New York State Department of Commerce, Bureau of Industrial Development, Ronald J. Peterson, director.	North Atlantic slope	P. O. Box 68 Room 348 Federal Building, Albany 1, N. Y.
North Carolina	North Carolina Department of Conservation and Development, Ben E. Douglas, director a	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 2857 Federal Building Raleigh, N. C.
Ohio	Ohio Department of Natural Resources, A. W. Marion, director.	Ohio River, St. Lawrence River	28 22 East Main Street Columbus 9, Ohio
a Succeede	a Succeeded by William P. Saunders, director, Dec. 15, 1955.	Dec. 15, 1955.	

State	Cooperating agency	Drainage basin	District office
Pennsylvania	Pennsylvania Department of Commerce, William R. Davlin, secretary. Pennsylvania Department of Agriculture, Dr. William L. Henning, secretary Soil Conservation Commission, Dr. William L. Henning, chairman. City of Philadelphia, Joseph S. Clark, Jr., Mayor. Department of Water, Samuel S. Baxter, Water Commissioner.	North Atlantic slope, Ohio River St. Lawrence River	Room 1302 U. S. Custom House 2nd and Chestnut Streets, Philadelphia 6, Pa.
South Carolina	South Carolina State Development Board, L. W. Bishop, director. ^b	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 2857 Federal Building Raleigh, N. C.
Virginia	Virginia Department of Conservation and Development Raymond V. Long, director.	North Atlantic slope, South Atlantic slope, Ohio River	P. O. Box 3327 University Station Charlottesville, Va. ^c
•		11 10 10 10 10 10 10 10 10 10 10 10 10 1	

b Succeeded by R. M. Cooper, director, Sept. 1, 1955. c Discontinued September 1956. For information write district office at Raleigh, N. C.

State	Cooperating agency	Drainage basin	District office
West Virginia	Ohio River Valley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer.	Ohio River	2822 E. Main Street, Columbus 9, Ohio.
Wisconsin	Committee on Water Pollution, George P. Steinmetz, chairman, and Theodore F. Wisniewski, director.	Hudson Bay and Upper Mississippi River	

STREAMFLOW

Most of the records of stream discharge used in conjunction with the chemical analyses and in the computation of sediment loads in this volume are published in Geological Survey reports on the surface-water supply of the United States. The discharge reported for a composite sample is usually the average of the mean daily discharges for the normal composite period. For analyses in which the composite periods differ from the normal 10 or 11-day period, the discharges reported are the averages of the mean daily discharges for the days indicated. The discharges reported in the tables of single analyses are either daily mean discharges or discharges for the time at which samples were collected, computed from a stage-discharge relation or from a discharge measurement.

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CHEMICAL ANALYSES, WATER TEMPERATURES, AND SUSPENDED SEDIMENT

PART 1A. NORTH ATLANTIC SLOPE BASINS, MAINE TO CONNECTICUT

MI 1A. NORTH ALLANIIC SLOPE BASINS, MAINE IO CONNECTI MISCELLANEOUS ANALYSES OF STREAMS IN NEW ENGLAND

		Color			8 82		84			38			75 50	
		Hq			8.6		7.7			8 8 8 8			6.0	
	Specific conduct-	ance (micro- mhos at 25°C)			56.4 37.0		117			26.3			29.2	
	Hardness as CaCO,	Non- carbon- ate			04		4.0			6 -1			4.03	
	Haro as C	Total			28		8 %			2 00			9	
	Dissolved solids	(residue on evap- oration at 180°C)			61		74 60			300			32 45	
er 1955		Nitrate (NO ₃)	×		1.1		1.6	NIN		1:1	_		2:1	
to Septemb	:	Fluoride (F)	VER BASI	MAINE	2.0.		0.1	tiver bas		0.1	ER BASIN	8	0.2	
ober 1954		Chloride Fluoride (C1) (F)	JOHN RI	ORT KENT,	4.0	f, MAINE	1.6	CROIX F	, MAINE	0.4	HIAS RIV	IAS, MAI)	1.5	
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Sulfate (SO ₄)	MISCELLANEOUS ANALYSES OF STREAMS IN ST. JOHN RIVER BASIN	ST. JOHN RIVER BELOW FISH RIVER AT FORT KENT, MAINE	7.5	MEDURNEKEAG RIVER NEAR HOULTON, MAINE	8.8	MISCELLANEOUS ANALYSES OF STREAMS IN ST. CROIX RIVER BASIN	ST. CROIX RIVER AT VANCEBORO, MAINE	2.6	MISCELLANEOUS ANALYSES OF STREAMS IN MACHIAS RIVER BASIN	EAST MACHIAS RIVER NEAR EAST MACHIAS, MAINE	6.4	
illion, wat	Blear.	bonate (HCO ₃)	OF STREA	FISH RI	25	IVER NEA	35	OF STREA	VER AT V	4.6	OF STREA	R NEAR E	6.8	
arts per m	Dotas.	stum (K)	NALYSES	ER BELOW	0.2	NEKEAG R	4.0	NALYSES	CROIX RI	0.2	NALYSES	IAS RIVE	4.0	
Jyses, in p		Sodium (Na.)	ANEOUS A	JOHN RIV	9.0	MEDUX	1.6	ANEOUS A	ST.	1.1	ANEOUS A	SAST MACH	1.9	
emical ana	Mag-	nestum (Mg)	MISCELI	ST.	1.5		1.3	MISCELI		0.6	MISCELI	n	8.0	
ວີ	-jeJ	cium (Ca)			8.1		22			6.6			3.2	
		(Fe)			0.48		0.13			97.0			0.27	
		Silica (SiO _s)			3.4		1.7			2.0			9.3	
		Discharge (cfs)			a 13, 500 64, 000		a182 1,050			1,200			a 600 027	
		Date of collection			Sept. 24, 1954		Sept. 22, 1954			Dct. 7, 1954 May 10, 1955			Oct. 7, 1954	a Mean discharge.
		1			Sept		Sept			May 10			May.	æ

MISCELLANEOUS ANALYSES OF STREAMS IN PENOBSCOT RIVER BASIN PISCATAQUIS RIVER AT DOVER-FOXCROFT, MAINE

Oct. 5, 1954	a1,700 980	1.9	0.27	8.8 4.	6.6	1.3	4.0	1121	-	5.7	9.	0.0	1.2	32 28	22	4 0	32.5 32.7	6.8	45 37
						PLEA	PLEASANT RIVER NEAR MILO, MAINE	ER NEAR	MILO	, MAINE									
Oct. 5, 1954 May 12, 1955	a 2, 090 1, 440	8.4	0.15	1.8	0.7 T.	1.0	0.0	7.0		3.1	0.5	0.1	1.0	32	7	1	23.9	6.9	37
	-					PENOBSC	OT RIVER	AT WES	T ENF	PENOBSCOT RIVER AT WEST ENFIELD, MAINE	INE					,			
Oct. 5, 1954	a 30, 600 27, 000	2.5	0.30	8.8 8.8	0.1 e:	1.1	0.0	13 ES		3.9	4.0	0.0	1.0	8 8	13	8 8	38.9 29.7	6.4	22
						PASSAD	UMKEAG R	IVER AT	LOWE	PASSADUMKEAG RIVER AT LOWELL, MAINE	M								
Oct. 5, 1954 May 19, 1955	a 786 703	8.9 2.3	0.25	3.0 2.8	1.0	1.5	0.4	11		1.2	0.7	0.2	1.5	36	22		29.9 27.2	6.6	90
						KENDUSKE	AG STREA	M NEAR	KENDU	KENDUSKEAG STREAM NEAR KENDUSKEAG, MAINE	AINE								
Oct. 5, 1954	a 1, 290 2, 400	1.4	0.29	12	2.0	1.9	0.8	85 55		5.2	1.8	0.1	1.4	61 78	88 69	1 4	91.2	7.5	65 45
				W	SCELLAN	SOUS ANA	YSES OF	STREAM	NI S	MISCELLANEOUS ANALYSES OF STREAMS IN SHEEPSCOT RIVER BASIN	T RIVER	BASIN							

MISCELLANEOUS ANALYSES OF STREAMS IN SHEEPSCOT RIVER BASIN SHEEPSCOT RIVER AT NORTH WHITEFIELD, MAINE

Sept. 29, 1954	a 250	3.1	0.36	8.7	0.7	2.0	1.1	21	5.3	1.6	0.1	9.0	39	12	2	6.68	6.3	45
Apr. 24, 1955	392	2.4	.15	3.5	₹.	1.8	4.	12	3.3	1.7	٥.	œ.	98	=		35.4	9.9	40
a Mean discharge.																		

5.3

85 4. £.

8 2

33 23

5.2.

.2.

6.4

3.5

9.1

0.4

1.8

1.0

0.29

3.2

a 829 8, 860

SACO RIVER AT CORNISH, MAINE

MISCELLANEOUS ANALYSES OF STREAMS IN NEW ENGLAND--Continued

28			NORTH	ATLAN	TIC	SLOPE	BASINS,	MAINE	TO (CONNE	CTICUT
		Color		38 23		8		25		8 Q	
		Н		7.0 8.6		7.3		6.4		6.8	
	Specific conduct-	ance (micro- mhos at 25°C)		28.7		50.0 47.0		26.8		40.1	
	ess CO,	Non- carbon- ate		2 4		4 4		s		4 %	
	Hardness ss CaCO,	Total		11		81 18		01		4 8	
pen	Dissolved	(residue on evap- oration at 180°C)		38 88		84 04		38		38	
5Contin		Nitrate (NO ₃)	z	8.6		4.0	ASIN	1.2		0.7 8.	_
mber 195		Fluoride (F)	/ER BASI	1.0	A.E.	0.1	RIVER B	0.0	œ	0.0	ER BASIN
954 to Septe		Chloride (C1)	NEBEC RIV	4.0	INER, MAI)	1.0	ROSCOGGIN	0.3	TER, MAIN	1.2	SACO RIV
nicommensors animisms of Siminal in the modern of the modern of the Chemical analyses, in parts per million, water year October 1954 to September 1955Continued		Sulfate (SO ₄)	MISCELLANEOUS ANALYSES OF STREAMS IN KENNEBEC RIVER BASIN DEAD RIVER NEAR DEAD RIVER, MAINE	4.2	COBBOSSEECONTEE STREAM AT GARDINER, MAINE	6.8	MISCELLANEOUS ANALYSES OF STREAMS IN ANDROSCOGGIN RIVER BASIN ANDROSCOGGIN RIVER AT ERROL, N. H.	4.7	NEZINSCOT RIVER AT TURNER CENTER, MAINE	3.6	MISCELLIANEOUS ANALYSES OF STREAMS IN SACO RIVER BASIN
water yes	300	bonate (HCO ₃)	OF STRE	==	E STREAM	11 81	F STREAM	7.0	ER AT TI	13 18	ES OF S'
r million,	Dotag	stum (K)	AALYSES D RIVER	4.0	SEECONTE	9.0	ALYSES O	0.0	SCOT RIV	8.0 8.	S ANALYS
in parts pe		Sodium (Na)	INEOUS AI	8.0	COBBOS	2.0	EOUS AN	7.0	NEZIN	1.8	ELLANEOU
nalyses.	Ž	mesium (Mg)	MISCELL	0.9		0.6.	ISCELLA	4.0		0.8	MISC
n hemical	3	chum (Ca)		2.9		4.8	2	3.5		4.4	
O		Fon (Fe)		0.53		0.17		0.56		0.28	
		Silica (SiO ₃)		1.4		0.8]	3.4		8.8	
		Discharge (cfs)		a1,120 1,000		a 230		2, 180		456	
		Date of collection		Sept. 24, 1954		Aug. 25, 1954		Apr. 28, 1955		Oct. 30, 1954	

LITTLE OSSIPEE RIVER NEAR SOUTH LIMINGTON, MAINE

Aug. 26, 1954 Apr. 26, 1955	a 58 6, 648	2.8	0.37	3.4	1.3	1.8	8.0 3.	15 14	4.3 8.3	1.6	0.1	6.0	37	27 77	s	35.8	6.7	38
					OSSI	PEE RIVE	R BELOW	OSSIPEE	OSSIPEE RIVER BELOW OSSIPEE LAKE AT EFFINGHAM FALLS,	FFINGHAM	FALLS,	м. н.						
Oct. 1, 1954	982	5.8	0.25	2.8	0.7	1.7	0.1	6.8	3.0	1.5	9.0	0.2	30	10	4	25.7	6.2	37
					MISCEL	LANEOUS	ANALYSE	3 OF STRU	MISCELLANEOUS ANALYSES OF STREAMS IN PISCATAQUA RIVER BASIN	SCATAQUA	RIVER B	ASIN						
						SALMON	FALLS 1	RI VER AT	SALMON FALLS RIVER AT SOUTH LEBANON, MAINE	SANON, MA.	INE							
Aug. 26, 1954	a 130 396	3.3	0.52	3.5	1.1	2.8	0.2	99	9.6	0.8	0.1	0.4	33 38	113	က္က	43.8	6.5	36
					MISCEL	LANEOUS	ANALYSE	S OF STRU	MISCELLANEOUS ANALYSES OF STREAMS IN MERRIMACK RIVER BASIN	ERIMACK 1	RIVER BA	NIS						
						LAKE WI	NNIPESA	UKEE OUT	LAKE WINNIPESAUKEE OUTLET AT LAKEPORT, N. H	EPORT, N	æ.							
Sept. 30, 1954	550 335	0.9	0.08	3.5	0.5	2.2	0.2	8.2 11	5.2	2.3	0.1	0.2	30	12	0 0	33.0 36.4	6.9	15
						MERRIMA	CK RIVE	R AT FRA!	MERRIMACK RIVER AT FRANKLIN JUNCTION, N.	TION, N.	н.							
Sept. 30, 1954	2,530 1,760	5.3	0.46	3.8 5.2	0.7	1.8	0.2	6.4 10	6.5	2.2	0.3 .0	4.0	39	13	7 6	40.5	6.3	20 28
						PISC	ATAQUOG	RI VER A	PISCATAQUOG RIVER AT GOFFSTOWN	N, N. H.								
Oct. 6, 1954	723	6.8 3.4	0.42	8.8 8.5	0.8	2.3	9.0	811	4.1	2.2	0.0	1.1	52 40	13	1 5	37.4	6.6	35
a Mean discharge.			!															

MISCELLANEOUS ANALYSES OF STREAMS IN NEW ENGLAND--Continued

			_	Chemical	analyses,	in parts p	er million	, water year	ar October	Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	ember 19	55 Conth	ned					
	2		1	Cal-	Mag.	:	Potas-	Bicar-	:	:	i		Dissolved solids	Hardness as CaCO ₃	ness CO,	Specific conduct-		
Date of collection	Discharge (cfs)	(SiO ₂)	Fron (Fe)	cium (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	(residue on evap- oration at 180°C)	Total	Non- carbon- ate	ance (micro- mhos at 25°C)	ЬН	Color
				MISCE	LLANEOUS	ANALYSE	S OF ST	REAMS IN	MERRIMAC	MISCELLANEOUS ANALYSES OF STREAMS IN MERRIMACK RIVER BASINContinued	ASINC	ontinue						
						NORTH	iashua r	IVER NEAF	R LEOMINS	NORTH NASHUA RIVER NEAR LEOMINSTER, MASS	<u></u>							
Oct. 12, 1954	118	8.4 8.5	1.5	12 6.7	1.6	\$::	1.4	20	32 15	12,7	0.0	3.0	148	19	0 m	219 98.9	7.1	9 61
					MISCELL	ANEOUS 4	INALYSES	OF STRE	AMS IN PR	MISCELLANEOUS ANALYSES OF STREAMS IN PROVIDENCE RIVER BASIN	RIVER B	ASIN						
						BLACE	STONE R	IVER AT 1	NORTHBRID	BLACKSTONE RIVER AT NORTHBRIDGE, MASS.								
Oct. 18, 1954 May 3, 1955	379 449	5.6 4.6	1.8	11	1.9	11 21	3.2	17 6.0	32	13 15	0.0	6.4	112 b 133	38	35	137 169	6.8 5.9	17
					MISCE	LLANEOUS	ANALYS	ES OF STE	REAMS IN	MISCELLANEOUS ANALYSES OF STREAMS IN THAMES RIVER BASIN	VER BAS	IN						
	•					inð	NEBAUG	RIVER AT	QUINEBAUG RIVER AT WESTVILLE, MASS.	E, MASS.								
Oct. 18, 1954	175 408	8.1 5.0	1.1	3.5	1.7	2.6	9.0	9.6 8.0	10 7.6	3.8	0.2	9.0 8.	43 43	511	0 to	49.4	6.3	85 20
						14	RENCH R	IVER AT W	FRENCH RIVER AT WEBSTER, MASS	MASS.								
Oct. 18, 1954 Apr. 28, 1955	255 358	2.8	0.47	5.2	1.1	11.8	2.0	14 20	12	5.6	0.0	1.9	67 66	19	80	74.6 87.1	6.4	33
						ж.	HOP RIVE	R NEAR CO	RIVER NEAR COLUMBIA, CONN	CONN.								
Oct. 5, 1954	53 418	9.0	0.38 .08	8.8	1.3 6.	2.3	1.7	12	7.1 8.8	3.0	0.1	3.5	35	13	80 80	64.4 48.4	6.2	32
b Contains 0.14 parts per million mang	er million ma	ganese (Mn).	Mn).															ĺ

QUINEBAUG RIVER AT PUTNAM, CONN.

Oct. 5, 1954 Apr. 27, 1955	398 1, 190	3.8	0.86	5.0 4.4	1.2	8.8 6.4	1.1	21	8.0 8.0	6.5	0.1	1.8	71 42	18 16	2.2	86.7 66.6	6.2	30
						W	OSUP RI	VER AT	MOOSUP RIVER AT MOOSUP, CONN	ONN.								
Oct. 5, 1954	109 306	2.8	0.56	2.7	1.1	23.3	1.0	10	5.2	3.2	0.2	1.1	32	12	es 44	52.7 43.8	6.8	40 40
						<i>1</i> λ	NTIC RI	VER AT	YANTIC RIVER AT YANTIC, CONN	CONN.								
Oct. 5, 1954	87 245	9.0	0.36	4.9	0.9 1.8	0.4.0	1.1	91 11	7.5	8.5	0.1	1.4	38 85	91 16	81-	63.5 53.8	7.4 6.8	8 8
					MISCELLA	NEOUS AN	TYSES 0	F STRE	IMS IN COR	MISCELLANEOUS ANALYSES OF STREAMS IN CONNECTICUT RIVER BASIN	RIVER BA	KISIN						
						FARMI	NGTON R	IVER AT	FARMINGTON RIVER AT RIVERTON, CONN.	, CONN.								
Oct. 1, 1954	1,980	2.4	0.26	3.5	1.6	1.5	0.8	15 8	7.3	2.2	0.1	1.5	35	22	80 80	55.8 43.3	6.3	35
						UPPER AM	IONOOSUC	RIVER	UPPER AMMONOOSUC RIVER NEAR GROVETON, N.	TETON, N.	н.							
Oct. 9, 1954	a 639 2, 470	4.8	0.20	3.4 4.	0.9 4.	1.3	0.3	7.4 9.0	5.6	1.1	0.2	1.0	22 32	13 13	- 9	29.4 28.0	8.8 6.5	16 70
						MOOM	SE RIVER	AT ST	MOOSE RIVER AT ST. JOHNSBURY, VT.	ex, vt.								
Oct. 9, 1954	229 376	6.1	0.23	5.5	111	1.1	0.7	21 17	4.4	2.1	0.0	9.0	59	28 81	& rc	47.9 37.9	7.0	98
a Mean discharge.																		

MISCELLANEOUS ANALYSES OF STREAMS IN NEW ENGLAND -- Continued

			O	hemical	analyses,	in parts p	er million	, water yea	ar October	Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	ember 195	5Contin	pen	i				
	Discharge	20,110	į	Cal-	Mag-	7	Potas-	Bicar-	77.0	1	:		Dissolved solids	Hardness as CaCO,	Hardness as CaCO,	Specific conduct-		
Date of collection	(cfs)	(SiO ₂)	(Fe)	cium (Ca)	nesium (Mg)	(Na)	Sturn (K)	bonate (HCO ₅)	Sulfate (SO ₄)	(C1)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Total	Non- carbon- ate	ance (micro- mhos at 25°C)	Hd	Color
			_	MISCELL	ANEOUS	ANALYSES	OF STRE	AMS IN C	CONNECTIC	MISCELLANEOUS ANALYSES OF STREAMS IN CONNECTICUT RIVER BASINContinued	BASINC	ontinue	77					
						ОМРОМРА	NOOSUC 1	SIVER AT	UNION VI	OMPOMPANOOSUC RIVER AT UNION VILLAGE, VT.								
Oct. 5, 1954	141	5.8 4.4	0.24	14 29	1.5	1.5	1.4	47	1.7	1.0	0.0	0.6	68	41	3 16	94.3	7.8	10
						Ж	SCOMA R1	VER AT M	MASCOMA RIVER AT MASCOMA, 1	N. H.								
Oct. 4, 1954	166 132	3.5	0.26	5.2	1.0	1.8	0.2	11	6.7 7.0	1.3	0.2	0.5	36	16	7. 4	42.6	6.9 8.8	35
						ottauqu	ECHEE R1	VER AT N	VORTH HAR	OTTAUQUECHEE RIVER AT NORTH HARTLAND, VI					!			
Sept. 23, 1954	269 312	1.9	0.16	16	2.3	1.5	2.0	53	8.2	3.3	0.0	9.0	75	49	9	107	7.3	8 6
						BLACK	RIVER !	AT NORTH	BLACK RIVER AT NORTH SPRINGFIELD, VT.	ELD, VT.								
Sept. 30, 1954June 2, 1955	a 121 236	3.1	0.17	9.2	2.2	2.6	0.8	32	8.4 7.3	2.7	0.0	9.0	62 52	32 26	9 4	74.3	7.5	3 15
						CONNECT	ICUT RIV	TER AT NC	CONNECTICUT RIVER AT NORTH WALPOLE,	OLE, N. H.								
Sept. 30, 1954	9, 670 23, 200	5.4	0.40	12	1.2	1.6	0.1	34 33	7.7	1.5	0.2	9.0	52	35	8.8	74.4	7.2	45 38
						DEERF	TELD RIV	TER AT CH	DEERFIELD RIVER AT CHARLEMONT, MASS.	, MASS.								
Sept. 26, 1954	a 109 111	4.9	0.17	5.6	1.2	1.5	0.7	12	10	1.9	0.0	1.2	74.5	19	9	50.3 45.1	7.2	14
a Mean discharge.																		

MISCELLANEOUS ANALYSES OF STREAMS IN ST. LAWRENCE RIVER BASIN

OTTER CREEK AT CENTER RUTLAND, VT.

Oct. 6, 1954	365 750	3.6	0.46	18 16	5.8	2.0	1.1	80 62	7.5	2.0	0.0	1.3	104 86	64 61	10	142 121	7.3	4 27
						•	1AD RIVE	R NEAR M	MAD RIVER NEAR MORETOWN, VI.	VŢ.								
Sept. 22, 1954	a 297	3.6	0.14	7.7	0.8	0.8	0.1	17	7.0	1:1	i	9.4	38	23	6	50.8 6.2	6.2	20
May 25, 1955	105	2.5	11.	7.2	.11 7.2 1.2	1.4	1.4	20	7.4	2.4		7. 0.	46		7	55.4	7.1	10
						LAMC	JILLE RI	VER AT E	AMOILLE RIVER AT EAST GEORGIA, VT.	IA, VT.								
Oct. 5, 1954	6, 180	4.0	0.82	9.3	1.4	0.8	0.3	27	7.7	1.0	1	1	c 50	53	2	68.5	6.8	20
May 24, 1955	1,360	2.1	.17	12	.17 15 2.7	1.6	1.8	21	8.8	5.6	0.	9.	67	49	-	105	7.3	14

a Mean discharge. c Contains 0.16 parts per million manganese (Mn).

NORTH ATLANTIC SLOPE BASINS, MAINE TO CONNECTICUT

CONNECTICUT RIVER BASIN

SCANTIC RIVER AT BROAD BROOK, CONN.

LOCATION.--Highway bridge on State Highway 140, 300 feet downstream of gaging station, 1 mile southwest of Broad Brook, Hartford County and 8½ miles upstream from mouth. DRAINAGE AREA.--98.4 square miles. RECORDS AVAILABLE.--Water temperatures: October 1953 to September 1955. Sediment records: November 1952 to September 1955.

EXTREMES, 1954-55.---Water temperatures: Maximum, 83°F Aug. 2; minimum, freez'ng point several days during December, January and February.

Sediment concentrations: Maximum daily, 242 ppm Aug. 20; minimum daily, 1 ppm Dec. 5. Sediment loads: Maximum daily 6,670 tons Aug. 19; minimum daily 0.2 ton Aug. 4.

EXTREMES, 1952-55.-- Water temperatures (1953-55): Maximum, 88°F Aug. 2, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 360 ppm Feb. 7, 1953; minimum daily, 1 ppm Jan. 22, 23, 1953, Dec. 5, 1954.

Sediment concentrations: Maximum daily, 360 ppm Feb. 7, 1953; minimum daily, 1 ppm Jan. 22, 23, 1953, Dec. 5, 1954.
Sediment loads: Maximum daily 6,670 tons (estimated) Aug. 19, 1955; minimum daily, 0.2 ton Aug. 23, 1953, July 25, 1954, Aug. 4, 1955.
REMARKS.--Records of specific conductance of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1954 to September 1955 given in WSP 1381.

Temperature (°F) of water, water year October 1954 to September 1955

			emperatu.	re (F) or	water, w	ater year	October	1954 to 56	ptemper	1800		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	44	43	37	33	41	48		60	75	81	67
2	64	43			32	39	45	59	64	77	83	69
2 3		48	38	39	32	37	49	60	62	79	82	67
4	67	46	36	40	34	36	43	66	63	81	81	62
5	65	47	38	37	34	36	43	67	65	80	72	71
		ŀ										
6	60	45	36	36	34	35	49	60	68	81	79	65
7	50	45	33		35	35	48	58	68	75	77	71
8	50	45	34	33	32		51	57	64	80	78	64
9	55	45	36		33	37	50	60	64	80	73	66
10	55	44	37	34	35	40	51		64	71	73	65
10			1					í I				
11	63	40	36	34	38	45	53	64	68	76	76	65
12	68	45	36	34	34	47	54	62	61	77	72	65
13	68	41	37	34	32	44	51	62	60	74	71	61
14	68	42	35	33	34	43	51	68	64	76	73	60
15	69	44	35	33	35	43	57	61	66	76	76	62
13				1			••			'-		
16	68	42	37	34	36	48	58	66	68	76	77	63
17	60	46	34		36	41	55	61	73	75	78	64
18	60	48	36	33	36	39	58	58	70	75	76	
19	57	49		33	36		56	61	73	78		66
20	58	53		33	42	40	59	65	69	77	74	68
20		1	l	"			"	1				•
21	56	55	33	33	39	40	55	67	76	79	72	63
22	55	49	32	34	39	39	52		69	80	73	66
22	56	44	35	35	40	38	60	67	70	79	73	56
. 23	55	43	34	35	37	38	58	70	70	77	70	59
· 23 24 25	55	44	33	35	35	38	48	86	66	76	68	56
20		_	1	1	"			1			-0	
26	56	40	34	35	36	36	51	70	70	77	64	59
20 27	54		34	35	40	38	45	67	66	76	64	59
28	53		35	33	38	36	47	1		75	65	60
29	50	43	34	32		41	49	70	75	76	63	60
30	50	43	32	33		44	49	70	77	77	64	62
31	43		39	33		49		69		70	67	
Aver-		 	 	 								-
age	59	45	35	34	36	40	50	64	67	77	73	63
		i	1	L			1					

CONNECTICUT RIVER BASIN

CONNECTICUT RIVER BASIN -- Continued

SCANTIC RIVER AT BROAD BROOK, CONN. -- Continued

Suspended sediment, water year October 1954 to September 1955

			ided sedime	nt, water ye	ar October 1	954 to Septe	mber 1955		
		October			November			December	
ŀ	Mean		d sediment	Mean		d sediment	Mean -		sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
· 1	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)_	day	(cfs)	tration (ppm)	day
1	91	6	1.5	138		5.6	256	5	3.4
2	88	7	1.7	115	15 17	5.3	209	4 1	2.3
3	93	6	1.5	334	60	s 57	172	ž l	. 9
4	93	8	2.0	333	42	38	150	2	.8
5	83	25	5.6	307	27	22	144	1	. 4
6	82	10	2. 2	216	26	15	133	2	.7
7	82 80	24	2. 2 5. 2	172	26 19	8.8	120	4	1.3
8	78	13	2.7	150	13	5.3	116	5	1.6
8 9	76	15	3.1	130	4	1.4	116	4	1.2
10	76	17	3.5	121	2	. 7	138	4	1.5
11	80	. 19	4.1		3	۰	156	4	1.7
12	80	17	3.7	113 111	3	.9 .9	144	4	1.6
13	78	14	2.9	109	3	9	128	ž	.7
14	75	24	4.9	107	2	.6	147	15	s 8.6
15	75	14	2.8	106	2	.6	400	52	56
16	83	30	6.7	103	3	ا م	389	23	24
17	112	41	12	103	3	.8	333	11	9.9
18	111	40	12	102	3	8	314	27	s 27
19)	92	40	9.9	103	3	.8	440	35	42
20	85	40	9.2	217	23	s 16	440	36	43
21	82	38	8.4	345	24	22	367	13	13
22	80	40	8.6	345	28	22	266	13	9.3
23	78	42	8.8	307	12	9.9	216	5	2. 9
24	76	24	4.9	216	8	4.7	202	6	3.3
25	76	10	2.0	216	6	3.5	196	5	2.6
26	75	5	1.0	216	6	3.5	178	2	1.0
27	-78	5	1.0	202	5	2.7	166	4	1.8
28	82	4	.9	184	6	3.0	161	6	2.6
29	107	17	4.9	234	13	8.2	190	21	11
30	138	19	7.1	256	7	4.8	332	32	s 27
31	146	17	6.7				356	10	9.6
Total.	2,727		151.5	5,754		273.5	7,075		312. 7
		January			February			March	
1	339	9	8.2	82	3	0.7	244	53	s 42
2	300	8	6.5	82	4	. 9	327	39	34
3	307	6	5.0	83	6	1.3	300	23	19
5	284 239	5 4	3.8 2.6	75 78	7 5	1.4	231 184	16 9	10 4.5
1			1		_	1.0		•	
6	231	7	4.4	80	6	1.3	190	15	7.7
7	256	7	4.8	254	63	s 47	248	10	6.7
9	216	5 5	2.9	223	22	13	209	6	3.4
10	196 178	4	2.6 1.9	196 137	10 8	5.3 3.0	202 256		a 9.3 a 16
					_		1		
11	161	4	1.7	154	36	s 21	307		a 17
12	150	4 4	1.6	292	68	54	345		a 29
14	138 126	4	1,5 1,4	184 172	39 41	19 19	333 292	18	16 6.3
15	120		1.6	138	22	8.2	256	6	4. 1
	121	5	1.0					- 1	
,,						1]]		
16	125	4	1.4	118	14	4.5	266	18	s 14
17	125 122	4 3	1.4 1.0	118 156	14 25	4.5 s12	307	8	6.6
17	125	4	1.4	118 156 202	14 25 20	4.5 s12 11	307 300		6.6 1.6
17	125 122 113	4 3 4	1.4 1.0 1.2	118 156	14 25	4.5 s12	307	8 2	6.6
17 18 19 20	125 122 113 111 109	4 3 4 5 4	1.4 1.0 1.2 1.5 1.2	118 156 202 172 150	14 25 20 11 9	4.5 s 12 11 5.1 3.6	307 300 239 202	8 2 2 2	6.6 1.6 1.3 1.1
17 18 19 20	125 122 113 111 109	4 3 4 5 4	1. 4 1. 0 1. 2 1. 5 1. 2	118 156 202 172 150	14 25 20 11 9	4.5 s12 11 5.1 3.6	307 300 239 202	8 2 2 2 3	6.6 1.6 1.3 1.1
17	125 122 113 111 109 95 103	4 3 4 5 4 3	1.4 1.0 1.2 1.5 1.2	118 156 202 172 150 144 135	14 25 20 11 9	4.5 s12 11 5.1 3.6	307 300 239 202 190 310	8 2 2 2 3 89	6.6 1.6 1.3 1.1 1.5 s 91
17	125 122 113 111 109	4 3 4 5 4	1.4 1.0 1.2 1.5 1.2	118 156 202 172 150	14 25 20 11 9 5 3	4.5 s12 11 5.1 3.6	307 300 239 202 190 310 513	8 2 2 2 2 3 89 86	6.6 1.6 1.3 1.1 1.5 s91 119
17	125 122 113 111 109 95 103 102	4 3 4 5 4 3 3	1.4 1.0 1.2 1.5 1.2	118 156 202 172 150 144 135 210	14 25 20 11 9	4.5 s12 11 5.1 3.6 1.9 1.1 s42	307 300 239 202 190 310	8 2 2 2 3 89	6.6 1.6 1.3 1.1 1.5 s 91
17	125 122 113 111 109 95 103 102 104 103	4 3 4 5 4 4 3 3 3 3	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8	118 156 202 172 150 144 135 210 284 239	14 25 20 11 9 5 3 64 32	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7	307 300 239 202 190 310 513 586 470	8 2 2 2 2 3 89 86 81 31	6.6 1.6 1.3 1.1 1.5 s 91 119 126 39
17	125 122 113 111 109 95 103 102 104 103	4344544333322	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8 .8	118 156 202 172 150 144 135 210 284 239	14 25 20 11 9 5 3 64 32 12	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7	307 300 239 202 190 310 513 586 470	8 2 2 2 2 3 89 86 81 31 21	6.6 1.6 1.3 1.1 1.5 s91 119 128 39
17	125 122 113 111 109 95 103 102 104 103	4 3 4 5 4 4 3 3 3 3	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8	118 156 202 172 150 144 135 210 284 239	14 25 20 11 9 5 3 64 32 12	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7 4.8 4.2	307 300 239 202 190 310 513 586 470 378	8 2 2 2 2 3 89 86 81 31 21 16	6.6 1.6 1.3 1.1 1.5 s 91 119 128 39
17	125 122 113 111 109 95 103 102 104 103	43454433332223	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8 .6	118 156 202 172 150 144 135 210 284 239	14 25 20 11 9 5 3 64 32 12	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7	307 300 239 202 190 310 513 586 470 378 356 321	8 2 2 2 2 3 89 86 81 31 21	6.6 1.6 1.3 1.1 1.5 s91 119 128 39
17	125 122 113 111 109 95 103 102 104 103 100 100 84 91	43454 433332 2332	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8 .6 .5	118 156 202 172 150 144 135 210 284 239 178 156 172	14 25 20 11 9 5 3 64 32 12 10 10	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7 4.8 4.2 4.6	307 300 239 202 190 310 513 586 470 378 356 321 275	8 2 2 2 2 3 89 86 81 31 21 16 12 11 10	6.6 1.6 1.3 1.1 1.5 s 91 119 128 39 21 15 10 8.2
17	125 122 113 111 109 95 103 102 104 103 100 100 84 91	43454 43332 2323	1.4 1.0 1.2 1.5 1.2 1.0 .8 .8 .6	118 156 202 172 150 144 135 210 284 239 178 156 172	14 25 20 11 9 5 3 64 32 12	4.5 s12 11 5.1 3.6 1.9 1.1 s42 25 7.7 4.8 4.2 4.6	307 300 239 202 190 310 513 586 470 378 356 321	8 2 2 2 2 3 89 86 81 31 16 12 11	6.6 1.6 1.3 1.1 1.5 8 91 119 128 39 21 15

s Computed by subdividing day. a Computed from partly estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, MAINE TO CONNECTICUT

CONNECTICUT RIVER BASIN--Continued

SCANTIC RIVER AT BROAD BROOK, CONN. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

									
		April		l	May			Juna	
i		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
D /	Mean	Mean		Mean	Mean		Mean	Mean	
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)		day	(cfs)		day
					(ppm)			(ppm)	
1	202	7	3.8	367	21	21	109	20	5.9
2	196	1 8	4.2	292	18	14	115	18	5.6
3	196	15	7.9	231	14	8.7	96	14	3.6
4	321	1	a 55				85	12	2.8
5				196	11	5.8			2.0
5	34 5	20	19	220	78	s 56	83	11	2.5
		l			ł	1 1	1		
6	327	16	14	266	35	s 27	83	10	2.2
7	321	10	8.7	239	15	10	76	8	1.6
8	284	7	5.4	223	13	7.8	73	10	2.0
9	239	7	4.5	202	10	5.4	73	10	2.0
10	202	8	4.4	178	10	a4.8	70	8	1.5
	202	۱ ۰	7.7	110		a4.0	10	•	1.5
11									
11	190	9	4.6	166	10	4.5	67	. 7	1.3
12	172	11	5.1	150	10	4.0	83	17	3.8
13	166	10	4.5	138	10	3.7	104	18	5.0
14	172	7	3.2	130	8	2.8	98	12	3.2
15	172	10	4.6	124	7	2.3	82	8	1.8
	-12	10	7.0	124	'	1 2.5	02	Ů	1.0
16	100	۱ ^	4.0	ا	١ .	ا ما	=-		٠
16	166	9	4.0	117	6	1.9	71	8	1.5
17	156	9 :	3.8	113	5	1.5	65	8	1.4
18	150	7	2.8	112	6	1.8	58	8	1.2
19	155	1 7	2.7	106	6	1.7	52	8	1.1
20	144	7	2.7	102	6	1.6	62	10	1.7
	~ 4 4	Ι '	,	***		1.0	J 32		4
21	138	8	م د	ا مما		ایرا	ا ـما	٠,٠	
25			3.0	96	6	1.6	61	10	1.6
22	156	8	3.4	93	6	1.5	86	18	4.2
23	172	9	4.2	91	6	1.5	82	14	3.1
24	166	9	4.0	92	5	1.2	76	13	2.7
25	249	1	a 15	135	14	5.1	85	15	3.4
	-10			100	**	3.1		10	0. 1
26	338	43	s 43	115	10	3.1	83	16	3.6
	450	49	60	112	10	3.0	75	ii	2.2
27			37						
28	430	32		96	10	2.6	65		b1.4
29	420	26	29	89	8	1.9	62		b1.3
30	400	23	25	88	10	2.4	57	8	1.2
31				89	12	2.9			
	7 104		200 5				0 997		TO 4
Total.	7,184		388.5	4,768		213. 1	2,337		76.4
	7,184		388.5	4,768	Angust		2,337	Sentember	
	7,184	July	388.5	4,768	 August			September	
Total.				4,768		213. 1			•
Total.	50	8	1.0	4, 768	10	0.8	242	20	13
1 2	50 50	8 8	1.0 1.0	31 31	10 8	0.8	242 221	20 13	13 7.8
1	50 50 55	8 8 9	1.0 1.0 1.3	31 31 29	10 8 4	0.8 .7 .3	242 221 206	20 13 18	13 7.8 10
1	50 50 55 64	8 8 9 8	1.0 1.0 1.3 1.4	31 31 29 28	10 8 4 3	0.8 .7 .3	242 221 206 192	20 13 18 24	13 7.8 10 12
1	50 50 55	8 8 9	1.0 1.0 1.3	31 31 29	10 8 4	0.8 .7 .3	242 221 206	20 13 18	13 7.8 10
1 2 3 4	50 50 55 64 58	8 8 9 8	1.0 1.0 1.3 1.4	31 31 29 28 25	10 8 4 3 4	0.8 .7 .3 .2	242 221 206 192 182	20 13 18 24 16	13 7.8 10 12 7.9
1 2 3 4 5	50 50 55 64 58	8 8 9 8 8	1.0 1.0 1.3 1.4 1.2	31 31 29 28 25	10 8 4 3 4	0.8 .7 .3 .2 .3	242 221 206 192 182	20 13 18 24 16	13 7.8 10 12 7.9
1	50 50 55 64 58	8 8 9 8	1.0 1.0 1.3 1.4	31 31 29 28 25	10 8 4 3 4	0.8 .7 .3	242 221 206 192 182	20 13 18 24 16 27	13 7.8 10 12 7.9
1	50 50 55 64 58	8 8 9 8 8	1.0 1.0 1.3 1.4 1.2	31 31 29 28 25 28	10 8 4 3 4	0.8 .7 .3 .2 .3	242 221 206 192 182 203 204	20 13 18 24 16 27	13 7.8 10 12 7.9
12345	50 50 55 64 58 52 49 57	8 8 9 8 8 8	1.0 1.0 1.3 1.4 1.2	4,768 31 31 29 28 25 28 29 65	10 8 4 3 4 4 9	0.8 .7 .3 .2 .3	242 221 206 192 182 203 204 193	20 13 18 24 16 27 18 12	13 7.8 10 12 7.9 15 9.9 6.2
1	50 50 55 64 58 52 49 57 49	8 9 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2	31 31 29 28 25 28 29 65 62	10 8 4 3 4 4 9 25 20	0.8 .7 .3 .2 .3 .7 4.4 3.3	242 221 206 192 182 203 204 193 168	20 13 18 24 16 27 18 12 6	7.8 10 12 7.9 15 9.9 6.2 2.7
12345	50 50 55 64 58 52 49 57	8 8 9 8 8 8	1.0 1.0 1.3 1.4 1.2	4,768 31 31 29 28 25 28 29 65	10 8 4 3 4 4 9	0.8 .7 .3 .2 .3	242 221 206 192 182 203 204 193	20 13 18 24 16 27 18 12	13 7.8 10 12 7.9 15 9.9 6.2
12345	50 50 55 64 58 52 49 57 49	8 8 9 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9	31 31 29 28 25 28 29 65 62 48	10 8 4 3 4 4 9 25 20	0.8 .7 .3 .2 .3 .3 .4 4.4 3.3 1.2	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
12	50 50 55 64 58 52 49 57 49 44	8 8 9 8 8 8 8 8 8 7 8	1. 0 1. 0 1. 3 1. 4 1. 2 1. 1 1. 0 1. 2 .9 1. 0	31 31 29 28 25 28 29 65 62 48	10 8 4 3 4 9 25 20 9	0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6 4	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
Total. 1 2 3 4 5 6 7 8 9 10 11 12	50 50 55 64 58 52 49 57 49 44	8 8 9 8 8 8 8 7 8	1. 0 1. 0 1. 3 1. 4 1. 2 1. 1 1. 0 1. 2 . 9 1. 0	31 31 29 28 25 28 29 65 62 48 48 93	10 8 4 3 4 4 9 25 20 9	0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6 4	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
1	50 50 55 64 58 52 49 57 49 44 57 64 52	8 8 9 8 8 8 8 7 8	1. 0 1. 0 1. 3 1. 4 1. 2 1. 1 1. 0 1. 2 .9 1. 0	31 31 29 28 25 25 26 62 62 48 48 93 2558	10 8 4 3 4 9 25 20 9	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6 4 14 25 14	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
1	50 50 55 64 58 52 49 57 49 44	8 8 9 8 8 8 8 7 8	1. 0 1. 0 1. 3 1. 4 1. 2 1. 1 1. 0 1. 2 .9 1. 0	31 31 29 28 25 28 29 65 62 48 48 93	10 8 4 3 4 4 9 25 20 9	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6 4	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43	8 8 9 8 8 8 8 7 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 9 1.0	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403	10 8 4 3 4 4 9 25 20 9 12 44 91	0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 868 885	242 221 206 192 182 203 204 193 168 152 154 172 159	20 13 18 24 16 27 18 12 6 4 14 25 14	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9
1	50 50 55 64 58 52 49 57 49 44 57 64 52	8 8 9 8 8 8 8 7 8	1. 0 1. 0 1. 3 1. 4 1. 2 1. 1 1. 0 1. 2 .9 1. 0	31 31 29 28 25 25 26 62 62 48 48 93 2558	10 8 4 3 4 9 25 20 9	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68	242 221 206 192 182 203 204 193 168 152	20 13 18 24 16 27 18 12 6 4 14 25 14	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 24 43	8 8 9 8 8 8 8 7 8 9 10 8 6 7	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.7	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416	10 8 4 3 4 9 25 20 9 12 44 91 78 64	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 868 885 873	242 221 206 192 182 203 204 193 168 152 154 172 159 144	20 13 18 24 16 27 18 12 6 4 14 25 14	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42	8 8 9 8 8 8 8 8 7 8 9 10 8 6 7	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1	4,768 31 31 29 28 29 65 62 48 48 93 258 403 416	10 8 4 3 4 9 25 20 9 12 44 91 78 64	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49	8 8 9 8 8 8 8 8 7 8 9 10 8 6 7	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.7 1.7	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114	10 8 4 3 4 9 25 20 9 12 44 91 78 64	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 42 42	8 9 8 8 8 8 8 7 8 9 10 8 6 7	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.7 1.7 1.7 8	4,768 31 31 29 28 29 65 62 48 48 48 49 30 258 403 416 233 114 398	10 8 4 3 4 9 25 20 9 12 44 91 78 64	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s268	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 42 43 42 49 52	8 8 9 8 8 8 8 8 7 8 8 9 10 8 6 7 10 16 11 19	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.7 1.7 2.1	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 568 585 573 23 7.4 566,670	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.1
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 42 42	8 9 8 8 8 8 8 7 8 9 10 8 6 7	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.7 1.7 2.1	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770	10 8 4 3 4 9 25 20 9 12 44 91 78 64	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s268	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 42 43 42 49 52	8 8 9 8 8 8 8 8 7 8 8 9 10 8 6 7 10 16 11 19	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.7 1.7 1.7 8	4,768 31 31 29 28 25 28 29 65 62 48 48 93 228 403 416 233 114 398 7,770 5,070	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 568 585 573 23 7.4 566,670	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.1
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 42 42 49 52 44 46	8 8 8 8 8 8 7 8 8 9 10 10 16 11 1 9 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 2.1 1.5 1.1	4,768 31 31 29 28 25 28 29 65 62 48 48 93 228 403 416 233 114 398 7,770 5,070	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 216 242	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 868 885 873 23 7.4 8 568 b6,670 s4,220	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 130	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 42 49 52 49 53	8 8 9 8 8 8 8 8 7 7 8 8 9 10 6 6 7 10 16 11 9 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 .7 .8 1.1 2.1 1.5 1.0	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 1,460	10 8 4 3 4 9 25 20 9 12 44 91 78 64 36 24 216 	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s68 s85 s73 s268 b5,670 s4,220 s 220	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135	20 13 18 24 16 27 18 12 6 4 14 25 14 25 6 6 6 6 6 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 43 44 46 38 38	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 1.0 1.4 1.7 1.1 2.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	4,768 31 31 29 28 25 26 29 65 62 48 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 850	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24 21 242 53	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s 68 s 85 s 73 23 7.4 s 268 b 6,670 s 4,220 s 220 124	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 122 118 105	20 13 18 24 16 27 18 12 6 4 14 25 14 5 6 6 6 10 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.3 2.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 24 42 49 52 49 52 49 53 83 83 83 83 83	8 8 9 8 8 8 8 8 7 8 9 10 10 16 11 19 9 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 1.7 1.1 2.1 1.5 1.1 1.0	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 1,460 850 606	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 44 46 38 38 38 38	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.0 1.2 1.0 1.4 1.7 1.1 2.1 1.1 2.1 1.1 2.1 1.1 2.7	4,768 31 31 29 28 29 65 62 48 48 48 48 49 3258 403 416 233 114 398 7,770 5,070 1,460 606 580	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 24 216 24 24 216 24 24 24 24 24 24 24 24 24 24 24 24 24	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s.85 s73 23 7.4 s.268 b.6,670 s4,220 s 220 124 80 66	242 221 206 192 182 203 204 193 168 152 154 172 172 159 144 132 122 118 130 102 105 102	20 13 18 24 16 27 18 12 6 4 14 25 14 5 6 6 6 6 6 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 16.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8 4.5 6.6 6.18
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 24 42 49 52 49 52 49 53 83 83 83 83 83	8 8 9 8 8 8 8 8 7 8 9 10 10 16 11 19 9 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 1.7 1.1 2.1 1.5 1.1 1.0	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 1,460 850 606	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 42 49 59 57 84 83 83 83 83 83 83 83 83 83 83 83 84 84 84 84 84 84 84 84 84 84 84 84 84	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.0 1.0 1.4 1.7 1.1 1.7 1.1 1.1 1.5 1.1 1.5 1.1 1.5 1.7 1.7	4,768 31 31 29 28 29 65 62 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450	10 8 4 9 25 20 9 12 44 91 78 64 216 24 216 24 24 25 36 24 24 21 36 24 24 25 25 25 25 25 25 25 26 27 27 27 27 27 27 27 27 27 27	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s.85 s73 23 7.4 s.268 b.6,670 s4,220 s 220 124 80 66	242 221 206 192 182 203 204 193 168 152 154 172 172 173 134 132 122 118 130 102 105 102	20 13 18 24 16 27 18 12 6 4 14 25 14 5 6 6 6 6 6 8 7 16	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8 4.5 6.6 6.6
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 44 46 38 38 38 38	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.0 1.0 1.4 1.7 1.1 1.7 1.1 1.1 1.5 1.1 1.5 1.1 1.5 1.7 1.7	4,768 31 31 29 28 29 65 62 48 48 48 48 49 3258 403 416 233 114 398 7,770 5,070 1,460 606 580	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 24 216 24 24 216 24 24 24 24 24 24 24 24 24 24 24 24 24	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s.85 s73 23 7.4 s.268 b.6,670 s4,220 s 220 124 80 66	242 221 206 192 182 203 204 193 168 152 154 172 172 159 144 132 122 118 130 102 105 102	20 13 18 24 16 27 18 12 6 4 14 25 14 5 6 6 6 6 6 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8 4.5 6.6 6.6
Total. 1	50 50 55 64 58 52 49 57 44 57 64 52 43 42 49 52 49 52 43 42 49 54 44 46 38 38 35 39 39 39 39 39 39 39 39 39 39 39 39 39	8 8 8 8 8 8 8 8 7 8 8 8 8 8 7 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 1.1 1.0 1.4 1.7 1.1 1.1 1.0 1.4 1.7 7 8 1.1 1.5 1.1 1.0 1.9 1.7 7 7 7	4,768 31 31 29 28 25 26 29 65 62 48 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 24 216 242 25 35 49 49 35 37	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 288 b6,670 s4,220 s 220 124 80 86 42 37	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 118 130 102 105 102 134 232	20 13 18 24 16 27 18 12 6 4 14 25 14 5 6 6 6 6 6 8 7 16	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8 1.9 4.5 6.6 a 118 a 256
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 42 42 42 49 52 44 46 63 83 83 83 83 83 83 83 83 83 83 83 83 83	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 1.7 1.1 1.5 1.1 1.0 .9 .7 .7 .7 .7 .7 .7	4,768 31 31 29 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333	10 8 4 3 4 9 25 20 9 12 44 91 78 64 36 24 216 242 53 54 49 49 35 36 36 36 36 37 38 38 38 38 38 38 38 38 38 38	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b5,670 s4,220 s24,220 s24,220 s24,220 s24,237 31	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 132 122 118 130 102 105 105 102 105 102 105 105 107 107 108 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.0 3.2 2.8 1.9 4.5 6.6 a 118 a 256
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 42 49 52 43 42 49 52 43 44 46 38 38 38 38 39 31 26 29	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 1.0 1.4 1.7 1.1 1.0 1.1 1.1 1.0 1.1 1.1 1.1 1.1 1.1	4,768 31 31 31 29 28 25 26 29 65 62 48 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 530 450 370 333 310	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24 216 - 242 53 54 49 42 25 35 37 35 35 35	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s 68 s 85 s 73 23 7.4 s 268 b 6,670 s 4,220 s 220 124 80 65 42 37 31 27	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130 102 105 102 104 105 107 107 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 10 8 7 16 24 	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.3 2.3 4.5 6.6 a 118 a 256
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 24 42 42 49 52 43 44 46 38 38 38 38 34 39 31 28 29 30	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 .7 .8 2.1 1.5 1.1 1.0 .9 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284	10 8 4 3 4 4 9 25 20 9 12 44 91 78 64 216 	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80 66 42 37 31 27 21	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 2118 130 102 105 102 104 102 105 102 104 102 105 106 107 107 108 108 108 108 108 108 108 108 108 108	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8 7	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.1 2.0 3.2 2.8 1.9 4.5 6.6 a118 a25 a26 a27 a27 a28 a28 a29 a29 a29 a29 a29 a29 a29 a29
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 44 46 38 38 35 35 31 29 30 31	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 1.0 1.4 1.7 1.1 1.1 2.1 1.1 1.0 .7 .7 .7	4,768 31 31 31 29 28 25 65 62 48 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284 259	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24 21 24 22 35 37 35 32 27 21	213.1 0.8 .7 .3 .2 .3 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s20 124 80 66 42 37 31 27 21 15	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130 102 105 102 104 105 107 107 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 10 8 7 16 24 	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.2 2.1 2.3 2.3 4.5 6.6 a 118 a 256
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 24 42 42 49 52 43 44 46 38 38 38 38 34 39 31 28 29 30	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 .9 1.0 1.4 1.7 1.1 .7 .8 2.1 1.5 1.1 1.0 .9 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	4,768 31 31 29 28 25 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284	10 8 4 3 4 4 9 25 20 9 12 44 91 78 64 216 	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80 66 42 37 31 27 21	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 2118 130 102 105 102 104 102 105 102 104 102 105 106 107 107 108 108 108 108 108 108 108 108 108 108	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8 7	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.1 2.0 3.2 2.8 1.9 4.5 6.6 a118 a25 a26 a27 a27 a28 a28 a29 a29 a29 a29 a29 a29 a29 a29
Total. 1	50 50 55 64 58 52 49 57 44 57 64 42 42 49 52 44 46 38 38 35 31 26 9 30 31	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 1.1 1.0 1.2 1.1 1.0 1.7 1.1 1.7 1.1 1.0 1.9 1.7 1.1 1.0 1.7 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.6 1.1 1.0 1.0 1.1 1.0 1.0 1.0 1.0 1.0 1.0	4,768 31 31 29 28 25 26 29 65 62 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284 259 246	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 - 242 25 35 49 49 42 57 37 35 35 37 35 32 27 27 22 20 20 21 21 21 21 21 21 21 21 21 21 21 21 21	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s 68 s 85 s 73 23 7.4 s 268 b 6,670 s 4,220 s 220 124 80 66 42 37 31 27 21 15 13	242 221 206 192 182 203 204 193 168 152 154 172 189 144 135 132 122 122 118 130 102 105 107 107 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 10 8 7 16 24 16 21 16 13	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8 1.9 6.2 2.7 1.6 5.8 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9
Total. 1	50 50 55 64 58 52 49 57 44 57 64 52 43 42 49 52 44 46 38 38 38 33 35 34 22 49 57 10 10 10 10 10 10 10 10 10 10 10 10 10	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 9 1.0 1.4 1.7 1.1 1.0 1.7 1.1 1.7 1.7 1.1 1.0 1.9 1.7 1.7 1.1 1.0 1.9 1.7 1.1 1.0 1.0 1.4 1.7 1.1 1.0 1.0 1.4 1.7 1.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	4,768 31 31 29 28 29 65 62 48 48 93 258 403 416 233 114 398 7,770 1,460 850 606 580 450 333 310 3254 2264 229 246 20,927	10 8 4 3 4 9 25 20 9 12 44 91 78 64 216 - - 242 25 35 35 49 49 217 222 227 227 227 221	213.1 0.8 .7 .3 .2 .3 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s20 124 80 66 42 37 31 27 21 15	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 2118 130 102 105 102 104 102 105 102 104 102 105 106 107 107 108 108 108 108 108 108 108 108 108 108	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 6 6 7 10 8 7	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8 1.9 6.6 a118 a 256 12 a49 a31 7.2 5.3 6.7 6.6 6.7 6.7 6.8 6.9 6.9 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 44 46 38 38 38 35 34 39 31 28 31 31 31 31 31 31 31 31 31 31 31 31 31	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 9 1.0 1.4 1.7 1.1 1.0 9 7 7 7 7 7 7 7 7 7 7 8 8 338.5	4,768 31 31 31 29 28 25 28 29 65 62 48 48 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284 259 246 20,927	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24 21 242 35 37 35 32 27 21 20	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80 66 42 37 31 27 21 15 13 12,115.2	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130 102 134 232 105 105 107 107 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 10 8 7 16 24 16 24 16 13	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8 1.9 6.6 a118 a 256 12 a49 a31 7.2 5.3 6.7 6.6 6.7 6.7 6.8 6.9 6.9 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0
Total. 1	50 50 55 64 58 52 49 57 49 44 57 64 52 43 42 49 52 44 46 38 38 38 35 34 39 31 28 31 31 31 31 31 31 31 31 31 31 31 31 31	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1.0 1.0 1.3 1.4 1.2 1.1 1.0 1.2 9 1.0 1.4 1.7 1.1 1.0 9 7 7 7 7 7 7 7 7 7 7 8 8 338.5	4,768 31 31 29 28 25 26 29 65 62 48 48 93 258 403 416 233 114 398 7,770 5,070 1,460 606 580 450 370 333 310 284 259 246	10 8 4 3 4 9 25 20 9 12 44 91 78 64 24 21 242 35 37 35 32 27 21 20	213.1 0.8 .7 .3 .2 .3 .7 4.4 3.3 1.2 1.6 11 s68 s85 s73 23 7.4 s 268 b6,670 s4,220 s 220 124 80 66 42 37 31 27 21 15 13 12,115.2	242 221 206 192 182 203 204 193 168 152 154 172 159 144 135 134 132 122 122 118 130 102 134 232 105 105 107 107 108 109 109 109 109 109 109 109 109 109 109	20 13 18 24 16 27 18 12 6 4 14 25 14 5 5 6 6 6 10 8 7 16 24 16 24 16 13	13 7.8 10 12 7.9 15 9.9 6.2 2.7 1.6 5.8 12 6.0 1.9 1.8 2.1 2.0 3.2 2.8 1.9 6.2 2.7 1.6 5.8 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9

a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

CONNECTICUT RIVER BASIN--Continued

SCANTIC RIVER AT BROAD BROOK, CONN. -- Continued

Particle-size analyses of suspended sediment, water year October 1984 to September 1955 (Methods of analysis: B. bofform withdrawal tube; D. decontation; P. pptette; S. Sieve; N. h mative water; W. h distilled water; C. chemically dispersed; M. mechanically dispersed)

	gg s						CO			
:	Methods of analysis		BWCM	BWCM	BWCM	BWCM	BWCM	BWCM	BWCM	BWCM
		1.000								
		0.500								
		0.350								
	llimeters	0, 250	100	100	100	:	;	100	100	100
	ize, in mi	0.125	66	88	86	001	100	66	88	66
	Percent finer than indicated size, in millimeters	0.062	94	92	88	96	96	06	2	8
ediment	ner than ir	0.031	8	63	92	87	72	74	98	85
Suspended sediment	Percent fin	0,016	99	47	29	18	62	64	£	87
S.	ı	0.008	53	36	40	19	47	49	64	74
	Concentration of suspension	0.004	40	25	8	20	37	36	30	57
		0.003	23	20	20	35	22	22	0	33
		analyzed (ppm)	398	321	177	999	791	422	374	294
	Concentration	of sample (ppm)	212	154	88	369	473	273	222	154
Water	tem- per-	ature (°F)	11	71	73	16		16		
	Discharge	(cfs)	335	365	413	260	445	168	4, 200	3,280
	Time		4:30 p.m.	6:30 p. m.	6:30 a. m.	11:30 a.m.	2:30 p. m.	7:00 p. m.	11:50 a.m.	3:30 p. m.
	Date of collection		Aug. 13, 1955	Aug. 13	Aug. 14	Aug. 18	Aug. 18	Aug. 18	Aug. 20	Aug. 20

HUDSON RIVER BASIN

GLOWEGEE CREEK AT WEST MILTON, N. Y.

LOCATION.--At gaging station at highway bridge, half a mile south of West Milton, Sarat County, 1½ miles upstream from Kayaderosseras Creek and 4 miles northwest of Ballston Spa.

DRAINAGE AREA.--26.0 square miles.
RECORDS AVAILABLE.--Chemical analyses: March 1953 to September 1955.
Water temperatures: March 1953 to September 1955.
EXTREMES, 1954-55.--Hardness: Maximum, 132 ppm Oct. 1-10; minimum, 47 ppm Feb. 23-24.
Specific conductance: Maximum, 251 micromhos June 11-20; minimum, 104 micromhos

Specific conductance: Flacthorm, -22 Marinum, 1-13.

Mater temperatures: Maximum, 80°F July 16; minimum, freezing point on many days during December, January, February, and March.

EXTREMES, 1953-55.-Hardness: Maximum, 132 ppm Oct. 1-10, 1954; minimum, 47 ppm
Feb. 23-24, 1955.

Conductance: Maximum 262 micromhos Nov. 6, 1953; minimum, 104 micromhos

Specific conductance: Maximum, 262 micromhos Nov. 6, 1953; minimum, 104 micromhos Mar. 11-13, 1955.
Water temperatures: Maximum, 81°F July 18, 1953; minimum, freezing point on many

Maximum, 81°F July 18, 1953; minimum, freezing point on many days water temperatures: Maximum, of r July 18, 1953; minimum, freezing point on many days during winter months.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1954 to September 1955 is given in WSP 1382.

Chemical analyses, in parts per million, water year October 1954 to September 1955

	Mean	Bicar-	a.	Hard as Ca		Specific conduc*-		
Date of collection	discharge (cfs)	bonate (HCO ₃)	Chloride (Cl)	Total (b)	Non- carbon- ate	ance (micro- mhos at 25°C;	Hq	Color
Oct. 1-10, 1954	6.3	134	4, 2	132	22	246	7.0	3
Oct. 11-20	8.4	126	4.8	130	27	247	7.6	3
Oct. 21-31	8. 2	127	5.2	124	20	247	7.4	3
Nov. 1-10	99	95	4.5	110	32	209	7.2	3
Nov. 11-20 Dec. 1-10	25 28	110 110	5.8 4.5	117 122	27 32	238 228	7.2 7.0	3 3
Dec. 1-10	69	90	5.2	108	34	201	6.9	2
Dec. 21-31	27	104	4.2	114	29	216	7.0	3
Jan. 1-10, 1955	23	108	4.0	114	26	218	7.0	4
Jan. 11-20	8.2	116	4.2	126	31	233	7.2	3
Jan. 21-31	5.1	114	3.8	118	24	231	6.7	0
Feb. 1 6, 9-10 Feb. 7-8	5.7 38	108 38	6.0 1.4	109 52	20 20	225 156	6.9 6.0	7
Feb. 11-20	13	102	6.2	104	20	226	6.8	3
Feb. 21-22	16	99	7.2	107	26	227	6.7	5
Feb. 23-24	111	32	4.8	47	20	112	6.2	7
Feb. 25-28	53	67	5.0	81	26	168	6.6	5
Mar. 1-3	196	41	3.8	54	20	116	6.3	3
Mar. 4-10	45	81	5.2	86	20	185	6.8	5 5
Mar. 11-13	249 109	44 74	3.5 3.5	52 81	16 20	104 160	6.7 7.2	5 5
Mar. 21, 24, 26-30	70	88	4.5	94	22	183	7.6	5
Mar. 22-23, 25, 31	157	62	3.5	69	18	138	6.7	4
Apr. 1-10	176	72	4.0	80	21	154	7.1	4
Apr. 11-20	95	80	4.0	88	22	170	7.1	8
Apr. 21-30	70	88	5.0	96	24	186	7.2	10
May 1-10	26	112	6.4	118	26	229	7.9	12
May 11-20	11 48	118 124	5.5	121	24 14	237 240	7.7 8.0	7 23
June 1	106	99	4.0 4.4	116 102	21	198	7.6	23
June 2-3	62	116	4.2	115	20	228	7.8	25
June 4-10	18	132	4.8	128	20	248	7.9	15
June 11-20	8.9	a135	4.2	121	12	251	8.3	10
June 21-30	5.5	122	4.8	123	23	242	7.8	5
July 1-10	4.7	124	4.2	122	20	237	7.7	5
July 11-20	3.8 5.6	122 114	4.5 3.0	115 115	15 22	228 225	7.6 7.6	5 5
Aug. 1-10	2.8	117	6.2	119	23	238	7.8	7
Aug. 11-12, 14-20	33	93	5.2	113	37	229	7.4	32
Aug. 13	104	59	4,5	79	31	170	6.9	32
Aug. 21-31	18	125	4.8	132	30	254	7.5	22
Sept. 1-10	6.3	131	4.5	129	22	248	7.6	8
Sept. 11-20	4.7	129	4.8	124	18	249	7.7	8
Sept. 21-23, 25-30	15	114	4.8	121	28	236	7.5	18
Sept. 24	59	85	5.0	95	25	191	6.9	28
Average	50.1	100	4.6	105	23	209		8

a Includes equivalent of one part per million of carbonate (CO_s).

b By compleximetric titration,

HUDSON RIVER BASIN

HUDSON RIVER BASIN--Continued

GLOWEGEE CREEK AT WEST MILTON, N. Y. --Continued

															H	JD	SO	N :	RI	VE	R	BA	SI	N									,	
	nber	min	64	62	61	19	62	61	62	28	22	90	63	61	21	22	9	90	28	62	64	64	28	22	£ :	ខ្ល	e	54	25	22	22	22	:	28
	September	max	67	68	89	67	68	67	99	63	62	99	99	65	62	8	63	64	62	65	67	67	99	9	28	8 1	- 6	24	26	26	28	26	:	63
	ust	min	10	71	20	20	2	20	2	69	64	63	65	67	99	99	20	72	20	69	89	71	72	20	89	64	49	63	67	61	28	09	99	67
	August	max	71	74	73	2	12	11	2	2	20	99	89	68	89	7	15	75	74	74	74	48	77	16	74	2:	69	40	71	69	67	67	68	11
	July	mim	68	20	2	69	20	2	99	67	71	72	12	67	65	99	89	89	73	73	11	67	68	69	2	2:	99	89	89	2	99	67	89	69
	Ju.	max	7.1	7	74	74	74	11	78	75	73	74	74	73	20	68	89	80	78	75	73	23	69	2	2	77	7.5	20	72	74	16	74	72	73
	June	utor	57	26	53	26	28	9	64	62	61	09	9	9	28	29	23	61	63	99	89	89	67	67	99	65	29	64	64	64	99	67	!	62
	ηſ	xeu	09	57	61	90	65	69	20	67	69	71	99	62	63	61	69	71	72	92	12	73	74	74	23	21	40	20	2	71	71	71	-	89
1955	May	uim	22	22	28	22	62	24	23	28	22	48	26	26	28	28	22	28	25	20	23	22	54	26	28	28	28	28	28	29	9	28	90	26
tember	M	max	62	63	65	67	7.1	65	63	63	28	61	63	67	67	67	99	62	29	62	64	65	68	67	99	65	65	9	62	99	99	63	62	64
water year October 1954 to September 1955	무	min	34	34	35	35	32	37.	37	36	37	39	42	42	43	43	44	45	45	44	48	47	47	47	49	48	47	46	46	42	42	2	:	42
er 1954	April	max	38	39	36	33	41	39	41	41	42	45	48	46	44	45	46	49	48	21	21	53	51	23	26	54	23	47	48	49	26	28	;	47
r Octol	March	min	33	33	33	33	33	33	34	34	33	32	32	32	32	32	32	32	32	32	32	32	33	33	8	e :	88	33	88	35	34	34	34	33
ater yes	Мa	max	34	33	33	34	34	34	34	34	35	33	32	32	32	32	32	32	33	33	33	88	33	83	33	4 .	34 4	34	34	35	32	37	38	34
ater, w	February	min	34	32	32	34	32	\$	8	33	33	32	8	88	33	34	33	33	g	33	32	35	33	33	83	8		33	88	83	;	;	:	33
F) of w	Febr	max	35	32	35	35	32	35	34	32	35	34	33	34	32	35	34	34	83	33	88	88	33	88	34	32	eeee	33	33	34	;	:	;	34
ature (°	January	min	32	32	32	32	32	32	32	32	33	32	32	33	33	33	33	32	33	33	33	88	33	33	4	* :	34	34	34	34	34	34	34	33
Temperature (°F) of water,	Jan	max	33	32	32	32	33	33	33	83	33	33	33	33	33	33	33	33	88	33	34	34	34	34	8	34	e 25	34	34	35	35	32	32	34
•	December	min	37	32	33	33	33	33	34	83	33	33	33	33	32	32	32	33	32	32	34	8	33	88	8	32	32	32	32	32	32	88	33	33
	Dece	max	38	37	35	34	33	34	34	34	34	33	33	34	32	35	32	34	83	34	34	34	33	88	88	8	, ,	33	33	32	34	34	34	34
	November	mim	42	\$	41	41	4	39	38	38	4	37	35	38	36	32	36	32	36	38	42	46	44	4	\$	g :	68	39	38	38	37	88	!	38
	Nove	max	43	41	44	42	42	#	40	4	40	\$	38	40	38	38	38	37	33	42	46	48	48	43	\$	40	66	39	38	39	39	38	;	41
	ober	mim	62	63	61	63	61	52	51	48	48	51	24	22	61	28	19	29	24	20	20	48	48	41	42	49	4.7	46	47	42	44	44	42	25
	Octob	max	65	65	64				26	_	21				64			63		54				20						48		44	44	28
	i d	Day	1	2	3	4	5	9		8	9.	10	11	12	13	14	15	16.	17	18	19	20	21	22	23	24	25	26.	27	28	29	30	31	Average

KAYADEROSSERAS CREEK NEAR WEST MILTON, N. Y.

LOCATION. --On highway bridge, 1,500 feet downstream from gaging station which is 500 feet downstream from Glowegee Creek, 1 mile east of West Milton, Saratoga Courty, and 3½ miles northwest of Ballston Spa. Temperature recorder is at gaging station.

DRAINAGE AREA. --90 square miles approximately.

RECORDS AVAILABLE. --Chemical analyses: October 1953 to June 1955 (discontinued).

Water temperature: October 1952 to September 1955.

Sediment records: February 1953 to June 1955 (discontinued).

EXTREMES, 1954-55.--Hardness: Maximum, 88 ppm Oct. 1-10; minimum, 46 ppm Mrc. 11-13.

Specific conductance: Maximum, 174 micromhos Oct. 1-10; minimum, 98.3 micromhos
Mar. 11-13.

Specific conductance: Maximum, 174 micromhos Oct. 1-10; minimum, 98.3 micromnos Mar. 11-13.

Water temperatures: Maximum, 83°F July 10; minimum, freezing point on many days during December, January, February and March.

Sediment concentration: Maximum, 162 ppm Nov. 3; minimum, 0.1 ppm May 20.

Sediment loads: Maximum daily, 374 tons Nov. 3; minimum daily, less than 0.05 tons Oct. 1, 4, 19, 22, 24, 26, 27.

EXTREMES, 1952-55.-Dissolved solids (1953-54): Maximum, 112 ppm Jan. 1-10, 1954; minimum, 74 ppm Mar. 1-10, 1954.

Hardness (1953-54): Maximum, 88 ppm Oct. 1-10, 1954; minimum, 40 ppm Mar. 21-22, 1954.

Water temperatures: Maximum, 83°F July 10, 1955; minimum, freezing point many days during winter montbs.

Sediment concentration: (1953-55): Maximum observed, 193 ppm Mar. 16, 1953; minimum,

Sediment concentration: (1953-55): Maximum observed, 193 ppm Mar. 16, 1953; minimum, 0.1 ppm Dec. 28, 29, 30, 1953, May 20, 1955.
Sediment loads (1953-55): Maximum daily, 453 tons Apr. 7, 1953, minimum daily, less than 0.05 ton on several days.

REMARKS.--Records of specific conductance of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1954 to September 1955 given in WSP 1382. No appreciable inflow between sampling point and gaging station.

CORRECTIONS.--WSP 1290: Sediment loads for Apr. 7, 1953 should be 5263 tons instead of s453 tons and the monthly total for April 1953 should be 556 instead of 748.6.

WSP 1350: Sediment loads for Apr. 7, 1954 should be 58.8 tons instead of s88 tons.

Chemical analyses, in perts per million, October 1954 to June 1955 Hardness Specific as CaCO. conductance Mean pН Bicar-Chloride Color Non-(micro-Date of collection discharge bonate (CI) (HCO.) Total carbonmhos at (cfs) 25°C) ate Oct. 1-10, 1954 3.2 7.3 Oct. 11-20 7.3 3.0 Oct. 21-31..... 3.2 6.7 4. 2 5.8 3.5 6.9 Nov. 21-30..... 3.5 6.7 7.0 Dec. 1-10..... 2.8 Dec. 11-20..... 144 2.5 7.0 Dec. 21-31...... 3.0 6.8 Jan. 1-10, 1955 6.7 Jan. 11-20..... 2.8 6.9 Jan. 21-31...... Feb. 1-10..... 7.2 5.5 Feb. 11-20..... 5.2 7.3 Feb. 21-22..... 5.5 7.0 Feb. 23-24..... 8.0 6.9 Feb. 25-28..... 4.2 7.1 Mar. 1, 5-10..... 3.5 7.2 3.5 6.7 Mar. 11-13, 16-17...
Mar. 14-15, 18-20...
Mar. 21, 24-26...
Mar. 22, 27-30...
Mar. 23, 31... 2.6 98.3 7.1 2.6 7.4 3.0 6.7 7.8 3.5 2.5 7.2 2.5 7.0 3.3 7.3 7.2 Apr. 17-20..... 4.6 Apr. 21-30..... 2.8 7.1 2.8 7.4 6.4 7.4 5.6 3.5 7.6 7.5May 30-31 1.8 June 1-4 2.5 7.3 2.5 7.5 2.8 7.6 7.8

KAYADEROSSERAS CREEK NEAR WEST MILTON, N. Y.--Continued

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

HUDSON RIVER BASIN--Continued

KAYADEROSSERAS CREEK NEAR WEST MILTON, N. Y.--Continued

Suspended sediment, October 1954 to June 1955

			Suspen	1		1 ame o rec	1		
		October			November		L	December	
		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean	Mean		Mean	Mean		Mean	Mean	T
Бау	dis-	concen-	Tons	dis-	concen-	Tons	dis-	-uesuo	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppra)	day
							-		
1	44	0.3	(t)	70	0.8	0.2	221	1	0.6
2	44	8.	0.1	94	. 8	.2	170	.8	. 4
	54	.8	.1	786	162	s 374	116	.8	. 2
4	57	.3	(t)	860	50	s123	90	.3	.1
5	49	.7	.1	493	11	15	82	1	.2
	44	2						١.	١ .
6	42	4	.2	286	2	1.5	76	1	.2
7			.4	204	1	.6	70	.ε	.1
8	41	.9	.1	165	.8	.4	68	2	.4
	41	.6	.1	142	2	.8	74	4	.8
10	42	1	.1	122	1	.3	82	2	.4
	59							١.	۱ .
11,		.4	.1	108	.4	.1	84	1	.2
12	62	1	.2	105	.3	.1	78	2	.4
13	54	1	.2	96	.4	.1	74	2	.4
14	47	1	.1	90	. 4	.1	92	5	1.2
15	46	1	.1	90	.3	.1	580		a 120
10	57	١.	ایا	۱ 🚓		!		۱ .	
16	57 55	1 _	.2	82	.4	.1	288	8	6.2
17	48 ·	.5	.1	84	.4	.1	165	3	1.3
18			.1	103	2	.6	268	l	a6
19	50 64	.3	(t)	100	1	.3	366	7	6.9
20	19.0	1	`.2	125	1	.3	215	4	2.3
91	58	1 1	.2	F00	70	-190		١ .	
21				528	70	s 122	145	2	.8
22	52 48	.3	(t)	494	16	s 23	100	2	.5
23		.4	.:1	260	3	2.1	108	2	.6
24	46	.3	(t)	194	2	1.0	114	3 _	.9
25	44	1	.1	208	2	1.1	92	.8	.2
0.0	40	۱ .		400		_			
26	43	.4	(t)	192	1	. 5	76	2	.4
27	47	.3	(t)	160	2	.9	78	2	.4
28	58	.7	.1	156	.6	.2	84	3	.7
29	55	.4	.1	389		a 21	160	8	3.4
30	68	. 5 . 5	.1	333	8	s8.2	150	4	1.6
31	63								
			.1				140	3	1.1
Total.	1,582		3.2	7,119		697.9	4, 506		158, 9
						697.9			
Total.	1,582	 January	3, 2	7,119	February		4,506	 March	158.9
Total.	1,582	January 2	3.2	7,119	February 2	0.1	4, 506 620	March	158.9
1	1,582 130 120	January 2 4	3.2 0.7 1.3	7,119 25 25	February 2 2	0.1	4,506 620 666	March 49 29	158.9 ' 8104 s55
1 2	1,582 130 120 130	January 2 4 2	3.2 0.7 1.3	7,119 25 25 25 24	February 2 2 3	0.1 .1 .2	620 666 405	March 49 29 7	158.9 \$104 \$55 7.6
1 2 3	1,582 130 120 130 110	January 2 4 2 3	3, 2 0, 7 1, 3 , 7	7,119 25 25 24 22	February 2 2 3 3	0.1 .1 .2 .2	620 666 405 220	 March 49 29 7 5	158.9 ' \$104 \$55 7.6 3.0
1 2	1,582 130 120 130	January 2 4 2	3.2 0.7 1.3	7,119 25 25 25 24	February 2 2 3	0.1 .1 .2	620 666 405	March 49 29 7	158.9 \$104 \$55 7.6
1	1,582 130 120 130 110 94	January 2 4 2 3 2	3.2 0.7 1.3 .7 .9 .5	7,119 25 25 24 22 21	February 2 2 3 3 1	0.1 .1 .2 .2	620 666 405 220 175	 March 49 29 7 5	158.9 \$104 \$55 7.6 3.0 .9
1	1,582 130 120 130 110 94 88	January 2 4 2 3 2 3 2	3.2 0.7 1.3 .7 .9 .5	7,119 25 25 24 22 21 30	February 2 2 3 3 1 4	0.1 .1 .2 .2 .2 .1	620 666 405 220 175	 March 49 29 7 5 2	158.9 158.9 104 105 106 107 108 108 108 108 108 108 108 108
1	1,582 130 120 130 110 94 88 80	January 2 4 2 3 2 3 4	3.2 0.7 1.3 .7 .9 .5	7,119 25 25 24 22 21 30 90	February 2 2 3 3 1 4 7	0.1 .1 .2 .2 .1	4,506 620 666 405 220 175 190 183	 March 49 29 7 5 2	158.9 \$104 \$55 7.6 3.0 .9 3.6 2.0
1 2 3 4 5 6 7 8	1,582 130 120 130 110 94 88 80 64	January 2 4 2 3 2 3 4 2	3.2 0.7 1.3 .7 .9 .5	7,119 25 25 24 22 21 30 90 70	February 2 2 3 3 1 4 7 10	0.1 .1 .2 .2 .1	4,506 620 666 405 220 175 190 183 140	March 49 29 7 5 2 7 4 6	158.9 \$104 \$55 7.6 3.0 .9 3.6 2.0 2.3
1	1,582 130 120 130 110 94 88 80 64 58	January 2 4 2 3 2 3 4 2 4 4 4	3.2 0.7 1.3 .7 .9 .5 .7 .9	7,119 25 25 24 22 21 30 90 70 64	February 2 2 3 3 1 4 7 10 4	0.1 .1 .2 .2 .1 .3 1.7 1.9	620 666 405 220 175 190 183 140 124	 March 49 29 7 5 2 7 4 6 5	158.9 \$ 104 \$ 555 7.6 3.0 .9 3.6 2.0 2.3 1.7
1 2 3 4 5 6 7 8	1,582 130 120 130 110 94 88 80 64	January 2 4 2 3 2 3 4 2	3.2 0.7 1.3 .7 .9 .5	7,119 25 25 24 22 21 30 90 70	February 2 2 3 3 1 4 7 10	0.1 .1 .2 .2 .1	4,506 620 666 405 220 175 190 183 140	March 49 29 7 5 2 7 4 6	158.9 \$104 \$55 7.6 3.0 .9 3.6 2.0 2.3
12345	1,582 130 120 130 110 94 88 80 64 58	January 2 4 2 3 3 2 3 4 2 4 9	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6	7,119 25 25 24 22 21 30 90 70 64 66	February 2 2 3 1 4 7 10 4 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7	620 666 405 220 175 190 183 140 124	 March 49 29 7 5 2 7 4 6 5	158.9 158.9 158.9 158.9 158.9 168.55 168.50 198.50 208.50 208.50 178.50 188.50
1	1,582 130 120 130 110 94 88 80 64 58 60	January 2 4 2 3 2 3 4 2 4 .9	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1	7,119 25 25 24 22 21 30 90 70 64 66	February 2 2 3 3 1 4 7 10 4 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4	4,506 620 666 405 220 175 190 183 140 124 145		158.9
Total. 1	1,582 130 120 130 110 94 88 80 64 58 60 54 50	January 2 4 2 3 2 3 4 2 4 4 2 4 1 2 4 1 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1	7,119 25 25 24 22 21 30 90 70 64 66 68	February 2 2 3 3 1 4 7 10 4 2 4 4 4	0.1 .1 .2 .2 .1 .3 1.7 1.9	4,506 620 666 405 220 175 190 183 140 124 145 470 735		158.9
1	1,582 130 120 130 110 94 88 80 64 58 60 54	January 2 4 2 3 2 3 4 4 9 1 2 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .5 .7 .9 .1 .1 .1	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86	February 2 2 3 1 4 7 10 4 2 4 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4	4,506 620 866 405 220 175 190 183 140 124 145 470 735 623		158.9
Total. 1	1,582 130 120 130 110 94 88 80 64 58 60 54 50 48	January 2 4 2 3 2 3 4 2 4 2 1 1 2 2 2 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .3 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68	February 2 2 3 3 1 4 7 10 4 4 4 1 2	0.1 .1 .2 .2 .2 .1 .3 1.7 1.9 .7 .4 .7	4,506 620 686 405 220 175 190 183 140 124 145 470 735 623 425		158.9
1	1,582 130 120 130 110 94 88 80 64 58 60 54	January 2 4 2 3 2 3 4 4 9 1 2 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .5 .7 .9 .1 .1 .1	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86	February 2 2 3 1 4 7 10 4 2 4 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4	4,506 620 866 405 220 175 190 183 140 124 145 470 735 623		158.9
Total. 1	130 120 130 110 94 88 80 64 54 60 54 54 54 54 54	January 2 4 2 3 3 4 2 4 .9 1 2 2 4	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5	7,119 25 25 24 22 21 30 90 70 64 66 68 80 68 60 68	February 2 2 3 3 1 4 7 10 4 2 4 1 1 2 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337		158.9
Total. 1	130 120 130 120 130 110 94 88 80 64 58 60 54 48 45	January 2 4 2 3 2 3 4 2 4 .9 1 2 2 4 .8	3.2 0.7 1.3 .7 .9 5.5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 69 62	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .4	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580		158.9 S104 S55 7.6 3.0 .9 3.6 2.0 1.7 3.1 a84 139 96 40 12 s76
Total. 1	130 120 130 110 94 88 80 64 58 60 54 50 45 45	January 2 4 2 3 3 4 2 4 2 4 .9 1 2 2 4 .8 1	3.2 0.7 1.3 .7 .9 5.5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58	February 2 2 3 3 1 4 7 10 4 2 4 4 1 2 1 1 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .4	4,506 620 686 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458	70 57 35 13 46 25	158.9
Total. 1	1,582 130 120 130 130 130 94 88 80 64 58 60 54 55 46 45 45 44 42	January 2 4 2 3 2 3 4 2 4 .9 1 2 2 4 .8 1 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .5	7,119 25 25 24 22 21 30 90 64 66 68 80 86 68 62 60 58	February 2 2 3 3 1 4 7 10 4 2 4 1 1 2 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .4 .7 .4 .9 .2 .4 .2	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458		158.9
Total. 1	1,582 130 120 130 130 194 88 80 64 58 60 54 54 54 45 44 44 42 39	January 2 4 2 3 2 3 4 2 4 .9 1 2 2 4 .8 1 2 2	3,2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 88 68 68 68 68 68 68 68 68 68	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 1 1 2 2 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270	70 57 35 13 46 25	158.9 158.9 158.9 158.9 104 105 105 106 107 107 107 107 107 107 107
Total. 1	1,582 130 120 130 130 130 94 88 80 64 58 60 54 55 46 45 45 44 42	January 2 4 2 3 2 3 4 2 4 .9 1 2 2 4 .8 1 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .5	7,119 25 25 24 22 21 30 90 64 66 68 80 86 68 62 60 58	February 2 2 3 3 1 4 7 10 4 2 4 1 1 2 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .4 .7 .4 .9 .2 .4 .2	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458		158.9
Total. 1	130 120 130 130 14 88 80 64 58 60 54 55 48 46 45 45 44 42 39 35	January 2 4 2 3 3 2 3 4 2 4 .9 1 2 2 2 4 .8 1 2 2 2 3 3	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 88 68 68 68 68 68 68 68 68 68	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 1 1 2 2 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270	70 57 353 13 46 25 8 5	158.9 158.9 158.9 158.9 104 105 105 106 107 107 107 107 107 107 107
Total. 1	130 120 130 130 110 94 88 80 64 58 60 54 45 45 45 44 44 42 39 35	January 2 4 2 3 2 3 4 2 4 .9 1 2 2 2 4 .8 1 2 2 2 2	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 62 60 58 58 60	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 2 1 1 2 2 2 3 3	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .2 .2 .2 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208	70 57 35 13 46 25 8 5 16	158.9 5104 555 7.6 3.0 .9 3.6 2.0 2.3 1.7 3.1 284 139 96 40 12 576 31 5.8 2.6 2.9 9.0
Total. 1	130 120 130 120 130 94 88 80 64 58 60 45 46 45 46 45 44 42 33 35	January 2 4 2 3 3 2 3 4 .9 1 2 2 4 .8 1 2 2 2 3 3 3 3 3 3 3 4 3 8 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3,2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 88 68 68 68 68 68 68 68 68 68 68 68 68	February 2 2 3 3 3 1 4 7 10 4 2 4 4 1 2 1 1 2 2 2 2 2	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356	70 57 35 13 46 25 8 5 16 24	158.9 5104 5104 556 3.0 3.6 2.0 2.3 1.7 3.1 a84 139 96 40 12 576 31 5.8 2.6 a23 9.0 s35
Total. 1	1,582 130 120 130 120 130 194 88 80 64 58 60 54 48 45 45 44 42 39 35 31 32	January 2 4 2 3 3 4 4 2 4 .9 1 1 2 2 2 4 .8 1 2 2 2 3 3 2	3.2 0.7 1.3 .7 .9 5.5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58 58 60 66 68 68	February 2 2 3 3 3 1 1 4 7 10 0 4 4 2 2 1 1 1 2 2 2 2 2 2 2 3 5 5 4 5	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532	70 57 35 13 46 25 8 5 5 16 24 16	158.9 S104 S55 7.6 3.0 .9 3.6 2.0 2.3 1.7 3.1 a84 139 96 40 12 S76 31 5.8 2.6 a23 9.0 s35 s25
Total. 1	130 120 130 120 130 94 88 80 64 58 60 45 46 45 46 45 44 42 33 35	January 2 4 2 3 3 2 3 4 .9 1 2 2 4 .8 1 2 2 2 3 3 3 3 3 3 3 4 3 8 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .2 .2 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58 58 60 68 61 400	February 2 2 3 3 1 4 7 10 4 2 4 4 1 2 2 1 1 2 2 2 2 3 5	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336	70 57 35 13 46 25 8 5 16 24	158.9
Total. 1	1,582 130 120 130 120 130 94 88 80 64 58 60 54 45 45 45 442 39 35 31 32 34 36 37		3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .2 .2 .2 .2 .2 .2 .3 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 68 69 68 69 68 68 60 68 60 68 60 68 60 68 60 68 60 68 60 68 60 68 60 60 60 60 60 60 60 60 60 60 60 60 60	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1	0.1 .1 .2 .2 .2 .1 .3 1.7 1.9 .4 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532	70 57 35 13 46 25 8 5 5 16 24 16	158.9 S104 S55 7.6 3.0 .9 3.6 2.0 2.3 1.7 3.1 a84 139 96 40 12 S76 31 5.8 2.6 a23 9.0 s35 s25
Total. 1	130 120 130 120 130 110 94 88 80 64 58 60 54 45 45 44 42 39 35 35 31 32 34 36 37	January 2 4 2 3 2 3 4 4 .9 1 1 2 2 2 4 .8 1 2 2 2 3 3 2 3 2 3	3.2 0.7 1.3 .7 9.5 .7 .9 3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .2 .3 .3	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58 58 60 68 61 400	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .2 .3 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336	70 57 35 13 46 25 8 5 5 16 24 16	158.9
Total. 1	130 120 130 120 130 94 88 80 64 58 60 54 55 48 46 45 45 44 42 39 35 31 32 34 36 37		3.2 0.7 1.3 .7 .9 5 .7 .9 3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .3 .2 .2 .3	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 68 69 58 58 60 66 68 410 400 250	February 2 2 3 3 1 4 7 10 4 2 4 4 1 2 1 1 2 2 2 2 3 5 45 14 4 3	0.1 .1 .2 .2 .2 .1 .7 .4 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336 292	70 57 35 13 46 25 8 5 16 19 5	158.9 5104 5104 555 7.6 3.0 .9 3.6 2.0 2.3 1.7 3.1 884 139 96 40 12 576 31 5.8 2.6 a 23 9.0 s 35 s 25 17 a 37
Total. 1	130 120 130 120 130 110 94 88 80 64 58 60 54 45 45 44 42 39 35 35 31 32 34 36 37	January 2 4 2 3 2 3 4 4 .9 1 1 2 2 2 4 .8 1 2 2 2 3 3 2 3 2 3	3.2 0.7 1.3 .7 .9 5 .7 .9 3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .3 .2 .2 .3	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 62 60 58 58 58 60 66 68 410 400 250 200 180	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 2 1 1 2 2 2 2 3 5 5 14 4 3 5	0.1 .1 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336 292 242	70 57 55 13 46 25 8 5 5 16 24 16 19 5 6	158.9
Total. 1	130 120 130 120 130 94 88 80 64 58 60 54 56 46 45 46 45 46 45 47 48 48 48 48 48 48 48 48 48 48 48 48 48	January 2 4 2 3 3 2 3 4 .9 1 2 2 4 .8 1 2 2 2 3 3 2 3 3 2 3 2 3 3 2	3.2 0.7 1.3 .7 9.5 .7 .9 3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .2 .3 .3	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 68 69 58 58 60 66 68 410 400 250	February 2 2 3 3 1 4 7 10 4 2 4 4 1 2 1 1 2 2 2 2 3 5 45 14 4 3	0.1 .1 .2 .2 .2 .1 .7 .4 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336 292	70 57 35 13 46 25 8 5 16 19 5	158.9
Total. 1	1,582 130 120 130 120 130 94 88 80 64 58 60 54 45 45 44 42 39 35 31 32 34 36 37 36 35 32 30 28	January 2 4 2 3 3 4 2 4 .9 1 1 2 2 2 4 .8 1 2 2 2 3 3 2 3 3 2 3 3 2 .6	3.2 0.7 1.3 .7 .9 5 .7 .9 .3 .6 .1 .1 .3 .2 .2 .5 .1 .1 .2 .2 .2 .2 .2 .2 .2 .3 .2 .3 .2 .3	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58 58 60 68 61 400 250 200 180	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 2 1 1 2 2 2 2 3 5 5 14 4 3 5	0.1 .1 .2 .2 .2 .1 .3 1.7 1.9 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3 .3 .3 .5 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336 292 242 183 165	70 57 35 13 46 25 8 5 16 24 16 19 5 6 6 6 3 3	158.9 S104 S55 7.6 3.0 .9 3.6 2.0 2.3 1.7 3.1 284 139 96 40 12 S76 31 5.8 2.6 2.3 9.0 S35 S25 17 a37 3.3 3.0 2.7 1.3
Total. 1	130 120 130 120 130 94 88 80 64 58 60 54 56 46 45 46 45 46 45 47 48 48 48 48 48 48 48 48 48 48 48 48 48	January 2 4 2 3 3 4 2 4 .9 1 1 2 2 2 2 3 3 2 3 3 2 3 3 3	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .2 .2 .2 .2 .3 .3 .2 .3 .3 .2	7,119 25 25 24 22 30 90 70 64 66 68 80 86 68 62 60 58 58 58 60 66 68 60 250 200 180	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 1 1 2 2 2 1 1 1 4 3 5 16	0.1 .1 .2 .2 .2 .1 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3 .3 .5 .9 .8 .8 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 292 242 183 165 156 282	70 57 35 13 46 25 8 5 16 24 16 19 5 6 6 6	158.9
Total. 1	1,582 130 120 130 120 130 94 88 80 64 58 60 54 45 45 44 42 39 35 31 32 34 36 37 36 35 32 30 28	January 2 4 2 3 3 4 2 4 .9 1 1 2 2 2 4 .8 1 2 2 2 3 3 2 3 3 2 3 3 2 .6	3.2 0.7 1.3 .7 .9 .5 .7 .9 .3 .6 .1 .1 .1 .1 .2 .2 .2 .2 .2 .3 .2 .2 .3 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .2 .3 .2 .2 .2 .2 .2 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	7,119 25 25 24 22 21 30 90 70 64 66 68 80 86 68 62 60 58 58 60 68 61 400 250 200 180 185	February 2 2 3 3 1 4 7 10 4 2 4 4 1 1 2 1 1 2 2 2 1 1 1 4 3 5 16	0.1 .1 .2 .2 .2 .1 .7 .4 .7 .9 .2 .4 .2 .3 .3 .3 .3 .3 .3 .5 .9 .8 .8 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	4,506 620 666 405 220 175 190 183 140 124 145 470 735 623 425 337 580 458 270 197 190 208 356 532 336 292 242 183 165	70 57 35 13 46 25 8 5 16 24 16 19 5 6 6 6 3 3	158.9 S104 S505 7.6 3.0 2.9 3.6 2.0 1.7 3.1 a84 139 96 40 112 S76 31 5.8 2.6 a23 9.0 S35 S25 17 a37

s Computed by subdividing day,
t Less than 0.05 ton,
a Computed from partly estimated curve

KAYADEROSSERAS CREEK NEAR WEST MILTON, N. Y .-- Continued

Suspended sediment, October 1954 to June 1955 -- Continued

						U 1000 U 000			
		April			May			June	
	Mean	Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Дау	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1,	621		a 240	162	1	0.4	333	11	811
2	701	67	127	150	.8	.3 [279	6	4.5
3	643	25	s45	140	.6	.2 .2 .3	173	1	.5
4	646		a 82	133	.7	.2	127	1	.3
5	664		a 65	124	. 8	.3	113	. 8	.2
6,	637	35	60	111	1	.3	92	.4	.1
7	604	22	36	105	. 6	.3 .2	81	.4	.1
8	450	5	6.1	115	.9	.3 .2 .2	74	.3	.1
9	357	5	4.8	108	. 8	.2 }	67	.3	.1
0,	413		a 18	99	.7	.2	62	.3	.1
1	490		a37	92	.4	.1	58	.6	.1
2	450	15	s19 1	86	. 5	.1	69	.2	(t)
3	357	8	7.7	82	.4	.1	78	.4	.1
4	339	3	2.7	78	.4	.1	64	.3	.1
5	604	37	60	73	.3	.1	61	.4	.1
6,	571	20	31	70	.4	.1	53	3	.4
7	379	10	10	65	.3	.1	48	2	.2
8	287	8	6.2	64	2	.3	47	4	. 5
9	292	5	3.9	61	.4	.1)	44	4	.4 .2 .5 .5
0	287	5	3.9	58	.1	(t)	45	2	.2
1	278	8	6.0	56	1	.2	47	3	.4
2	284	4	3.1	53	. 8	.1	46	3 2	2
3	234	3	1.9	117	30	s 22	47	3	.4
4	197	3	1.6	228	33	s 26	41	.5	.1
5	357	12	s15	165	12	86.8	41	3	.3
6	398	13	14	209	8	s5.0	45	.8	.1
7	298	, 6	.5	137	2	.7	40	.4	(t)
8	237	.7	.4	100	. 8	.2	39	.1	`.1
9	201	.6	.3	140	9	s8.4	35		e.1
0	177	.3	.1	384	30	s 34	34	.6	. 1
ı				192	7	3.6			
Total.	12,453		908.2	3,757		110.7	2,383		21.0

 Total.
 12,453
 - 908.2
 3,757
 - 110.7
 2,383
 - 21.

 Total disharge for period Oct. 1, 1954 to June 30, 1955 (cfs-days)
 ...
 ...
 46 755

 Total load for period Oct. 1, 1954 to June 30, 1955 (tons)
 ...
 3,043
 3,043.5

e Estimated.
s Computed by subdividing day.
t Less than 0.05 ton.
a Computed from partly estimated curve.

HUDSON RIVER AT MECHANICVILLE, N. Y.

LOCATION . -- At west shore of Hudson River at West Virginia Pulp and Paper Co., Mechanic-

LOCATION. --At west shore of Hudson River at West Virginia Pulp and Paper Co., Mechanic-ville, N. Y.

DRAINAGE AREA. --4,500 square miles.

RECORDS AVAILABLE. --Water temperatures: January 1947 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 82°F Aug. 5-7; minimum, freezing point on several days during December, January and Pebruary.

EXTREMES, 1947-55. --Water temperatures: Maximum, 82°F July 1-2, 1953, Aug. 5-7, 1955; minimum, freezing point on many days during winter months.

REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
						-						
1	64	51	40	34	33	32	41	49	68	75	81	74
2	65	49	39	35	33	32	40	55	66	77	81	7:
3	65	49	37	33	33	32	41	54	63	77	80	7:
4	66	47	37	34	32	32	38	55	65	79	81	
5	65	47	37	33	32	32	37	57	64	81	82	74
6	65	46	35	33	32	32	40	59	64	80	82	7
7	61	46	32	33	33	32	41	58	66	78	82	7
8	59	45	33	33	33	32	39	58	67	79	81	7
9	59	44	33	33	33	32	40	57	67	80	78	7
10	59	42	33	33	32	33	40	57	67	80	77	71
11	61	42	33	33	32	32	41	57	68	80	77	6
12	60	43	34	33	32	36	43	57	68	79	76	7
13	61	41	35	33	32	37	43	59	69	78	75	6
14	61	40	34	33	32	36	43	60	67	78	75	6
15	63	41	35	33	32	36	42	60	66	80	75	6
16	63	40	35	33	32	36	43	60	67	80	75	6
17	61	41	35	33	32	35	44	59	68	81	76	6
18	60	41	35	33	32	35	44	59	70	80	79	6
19	59	43	35	33	32	35	44	60	72	81	78	7
20	57	45	35	33	32	36	44	60	74	80	78	6
21	57	45	33	33	32	36	45	61	73	80	79	6
22	55	45	33	33	32	35	45	63	74	80	79	6
23	55	45	32	33	32	35	45	67	75	80	79	6
24	57	43	32	33	32	35	46	66	75	80	77	6
25	55	44	32	33	32	35	47	67	74	80	77	6
26	55	43	33	33	32	35	45	68	74	80	76	6
27	55	41	33	33	32	35	45	67	74	80	75	6
28	53	41	33	33	32	35	45	66	74	79	75	6
29	53	41	33	33		36	45	67	75	78	75	6
30	53	40	33	33		35	48	68	75	78	74	6
31	51		34	33		37		69		80	75	
ver-	59	44	34	33	32	34	43	61	70	79	78	6

MOHAWK RIVER AT COHOES, N. Y.

LOCATION. --On Route 4 highway bridge, 1,200 feet downstream from gaging station at Cohoes, Albany County.
DRAINAGE AREA. --3,456 square miles.
RECORDS AVAILABLE. --Sediment records: January 1954 to September 1955.
EXTREMES, 1954-55. --Sediment concentrations: Maximum daily, 279 ppm Mar. 13; minimum daily, 2 ppm Oct. 6, 7, 21, 31.
Sediment loads: Maximum daily, 30,900 tons Mar. 12; minimum daily, 0.8 ton Aug. 7.
EXTREMES, January 1954 to September 1955. --Sediment concentrations: Maximum daily, 323 ppm Feb. 18, 1954; minimum daily, 1.0 July 18, 1954.
Sediment loads: Maximum daily, 42,100 tons Feb. 18, 1954; minimum daily, 0.8 ton Aug. 7, 1955.
REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

WSP 1382.

		Suspe	ended sedim	ent, water y	ear October	1954 to Sept	ember 1955		
		October			November			December	
		Suspende	i sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	1,580	15	64	1,740	6	28	11,100	15	450
2	1,580	15	64	1,710	14	65	8, 420	15	341
3]	760	12	25	10,300	30	s1,040	6,070	15	246
4	1,600	9	39	22,800	49	3,020	5,730	14	216
5,	1,670	4	18	12,800	70	2,420	5,390	14	204
6	1,740	2	9.4	9,010	48	1,170	7,280	10	196
7	1,750	2	9.4	5,240	32	453	6,360	8	137
8	1,740	3	14	3,500	26	246	6,360	8	137
9	1,380	5	19	3,780	20	204	6,250	9	152
10	837	9	20	4,110	16	178	5,210	9	127
11	1,240	8	27	3,090	13	108	4, 140	13	145
12	1,560	8	34	2,940	12	95	3,730	12	121
13	1,340	8	29	2,440	11	72	3,450	12	112
14	1,740	14	36	2,700	10	73	3,440	12	111
15	1,810	14	68	2,360	9	57	10,700	13	376
16	1,930	13	68	2,460	8	53	14,000	39	1,470
17	1,880	11	56	2,260	8	49	9, 820	43	1,140
18	1,740	9	42	2,630	6	43	8,710	33	776
19	1,510	6	24	2,540	6	41	14,800	26	1,043
20	1,270	4	14	2,450	6	40	12,000	38	s1,190
21	1,660	2	9.0	9,340	18	s703	8, 210	38	842
22	1,270	4	14	17,500	23	1,090	4, 250	30	s 362
23	1,280	4	14	10,400	30	842	4,310	22	256
24	1,160	5	16	8,260	30	669	4,290	16	185
25	1,400	18	68	7,330	37	732	4,300	12	139
26	1,200	5	16	7,130	28	539	3,930	9	95
27	1,180	3	9.6	6,630	21	376	3,660	8	79
28	1,210	4	13	3,600	18	175	3,520	7	66
29	1,480	8	32	8,780	15	356	6,390	5	86
30	1,860	13	65	14,300	15	579	14,600	10	394
31	1,800	2	9.7				13,600	47	1,730
Total.	46,157		976.1	194, 130		15,516	224,020		12,921

s Computed by subdividing day.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

HUDSON RIVER BASIN -- Continued

MOHAWK RIVER AT COHOES, N. Y .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued Mirch January February Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean N°an Dav dis-Tons dis-Tons dis-Tons concenconcenconcencharge charge charge per per per tration tration tration day day (cfs) (cfs) (cfs) day (ppm) (ppm) (ppm) 1. 11.100 42 1,260 2,230 36 10,000 s 434 8,360 2. 33 745 2, 190 R 47 30,400 146 s12,200 3. 609 2,100 2,050 1,740 26 10 57 21,600 150 s 9,020 4. 9,070 19 465 a61 14,400 10,500 --72 2,800 5, 7,460 14 282 a 52 44 1,250 6. 6.150 13 216 2,040 a60 8,640 27 630 5,440 4,030 7. 9 2,750 3,450 3,890 7 5 132 52 7,300 15 296 6,050 5,520 5,990 8. 8 87 46 180 11 9. 4,660 101 94 134 9 10. 4.190 8 90 3,680 9 89 8 11. 3,490 8 75 3,570 7 67 19.500 20 s 1.220 4, 170 79 25 12. 5,370 s 372 41,100 274 s30,900 3,760 3,490 13. 5 51 5,180 8 112 31,700 279 s 24, 200 21,500 14..... 85 3,850 15 156 139 s 8, 240 2,480 15. 10 67 3.540 25 239 15,600 80 3,370 3.670 8 79 3,400 17 156 16,000 1.940 3,070 2,730 2,420 3,340 3,300 2,970 3,240 17..... 7 58 18 162 18,000 51 2,480 18. 7 52 11 98 12,900 54 1.880 19. 7 46 7 56 10,200 40 1,100 20..... 2,650 7 50 6 52 8, 430 26 592 21..... 2.260 6 37 2,690 6 44 8,640 20 466 22. 2,680 2,490 9,600 17,600 6 5 43 3,090 7 5R 18 466 23. 6,440 16,200 10 34 1,190 174 25 24. 2,840 38 s 1, 110 26 15,500 50 2,090 25. 2,410 7 11,100 54 1,620 13, 200 1,350 46 38 2,410 6 7,330 26..... 39 38 752 12,500 32 1.080 27..... 9,640 7,430 6,370 2,690 29 5,900 5,590 21 11 334 33 859 2,800 28. 30 166 29 582 29..... 2.290 3 18 17 292 30. 1,820 7 34 24 ----7.050 15 285 31. 2,220 4 11, 100 450 15 5,001 Total. 127,980 122, 220 ----6,322 433,960 112,105 May April J me 1.... 1,540 15,400 37 6,180 24 400 2,990 5,360 145 18 2. 18,900 19,700 19,900 299 324 57 2,910 4,810 23 31 449 3. 45 2,390 5,000 24 6,240 32 539 4. 55 2,960 3,590 24 233 4,440 24 288 5. 62 19,900 3,330 3.320 25 224 3.540 19 182 6. 15,600 57 2,400 3,350 30 271 3, 320 19 170 18,700 17,700 7. 2,020 1,770 3,380 3,290 40 33 301 3,300 18 160 8. 37 35 311 2,880 20 156 9. 1,060 2. 230 2,770 38 284 120 20 10. 12,100 3,570 31 299 2,040 18 99 20 10.500 567 3,490 26 245 1.740 18 84 12. 11,700 14,000 20 632 3,320 23 206 1,350 17 62 13. 21 794 3,140 22 186 2,070 25 140 14. 13,100 15,600 22 778 2,270 20 122 1,980 27 144 15. 22 927 2,140 20 116 2,140 25 144 21.400 28 1,620 16. 2,360 20 127 2.360 22 140 17,900 17,200 17. 34 1,640 2,000 1,940 22 119 2.100 18 102 34 1,580 27 1,340 18. 141 16 58 19. 13,600 1, 210 149 1,550 16 67 14,800 20. 29 1, 160 2.200 23 137 1,800 22 107 1,200 15,400 17,400 1,160 21. 14 10 45 1.960 22 116 22. 29 1,360 972 26 1,570 21 89 23. 13,000 29 1,020 1,680 15 68 1,480 20 80 10,600 24. 1,730 2,080 30 859 16 75 1,670 19 25. 10,800 29 846 15 84 1,590 18 77 26. 17,000 30 1.380 2,970 18 144 996 17 46 12,100 27. 30 980 3,540 2,770 20 22 101 1,580 15 64 10,700 30 867 1,410 164 28. 14 53 8,110 30 657 3,040 22 180 1,420 29. 12 46 2,700 6.560 30 531 19 10 30. 138 1,430 39 31. 2,810 16 121 Total . 442,870 41,732 89.822 5,730 69.876 4.052

s Computed by subdividing day.

a Computed from estimated concentration graph.

HUDSON RIVER BASIN

HUDSON RIVER BASIN--Continued

MOHAWK RIVER AT COHOES, N. Y .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

	r	July		11	August			September	
			d sediment			ed sediment	 		d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1 2 3 4 5	1,330 1,110 727 658 1,290	9 8 7 7 8	32 24 14 12 28	972 1,000 1,050 978 960	11 11 11 10 10	29 30 31 26 26	2,320 1,830 1,460 506 589	24 18 15 13	150 89 59 18 17
6 7 8 9	1,300 1,300 1,320 904 250	7 7 7 7 8	24 24 25 17 5.4	806 79 944 952 838	9 4 11 26 12	20 . 8 28 67 27	1,090 1,040 1,200 1,080 995	13 17 13 13	38 48 42 38 46
11 12 13 14	1,010 1,060 1,080 1,080 944	11 11 10 10	30 31 29 29 25	1,680 1,240 2,430 6,970 3,490	20 27 22 29 23	91 90 144 546 217	240 1,240 982 931 1,190	15 17 15 15	9.7 57 40 38 58
16 17 18 19	790 238 1,690 1,330 1,340	10 10 15 14 12	21 6. 4 68 50 43	2,510 2,020 2,450 3,170 9,380	23 24 28 39 35	156 131 185 334 886	982 866 129 1,740 1,080	16 14 19 19	42 33 6.6 89 41
21 22 23 24	1,100 1,150 824 100 1,120	9 10 8 6 7	27 31 18 1.6 21	3, 950 3, 960 4, 170 3, 390 3, 110	30 28 27 37 45	320 299 304 339 378	1,170 1,080 1,020 1,130 1,520	14 16 17 16 15	44 47 47 49 62
26 27 28 29 30	1,010 996 938 1,040 830 118	10 10 10 10 10 7	27 27 25 28 22 2. 2	2,050 1,920 1,370 1,800 1,630 1,480	32 25 23 23 25 25	177 130 85 112 110	1,400 1,500 1,790 2,500 2,440	14 13 14 15 16	53 53 68 101 105
Total .	29,977		767.6	72,749		5, 454. 8	37,040		1,590.3

Total discharge for year (cfs-days) 1,870,801
Total load for year (tons) 2'3,167.8

MOHAWK RIVER AT VISCHER FERRY DAM, N. Y.

LOCATION.--At bridge crossing headrace of Vischer Ferry powerplant operated by New York State Department of Public Works.

DAATLABLE.--3.385 quare miles.

RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1953.

Water temperatures: October 1951 to September 1955.

Water temperatures: October 1951 to September 1955.

Water temperatures: Maximum, 85.F Aug. 5; minimum, freezing point on many days during December, January and February.

EXTREMES, 1954-55.--Water temperatures: Maximum, 85.F Aug. 5; minimum, freezing point on many days during December, January, February and March.

Temperature (°F) of water, water year October 1954 to September 1955

			1																														,	
	September	m·ď	15	9	92	12	18	75	75	73	73	22	70	20	2	69	69	69	20	11	25	:	69	89	8	9	99	65	65	64	67	25	;	20
	Septe	a. m.	75	4	4	74	73	74	74	74	72	10	7.1	68	89	20	89	68	89	89	20	2	20	67	9	92	65	64	64	64	64	64	:	69
	ust	p. m.	82	8	8	*	82	83	8	83	81	8	77	E	48	16	16	7.8	42	19	46	3	28	E :	20	92	8	1	16	92	15	75	76	64
	August	a.m.	80	2	82	2	18	81	82	8	4	4	49	4	42	77	15	26	48	48	18	2	18	16	9.	11	75	7.4	75	7.	15	15	15	48
	July	p. m.	78	2	æ :	8	8	81	83	18	82	84	83	82	82	82	82	46	8	82	85	20	82	8	2	82	82	88	82	81	83	81	81	82
	Ju	a.m.	75	E.	77	-38	18	80	80	8	80	81	81	81	8	13	81	80	82	81	81	78	81	8	2	22	8	8	81	8	8	8	43	80
	June	b.m.	89	29	6	6	99	89	69	7.1	2	11	11	70	2	69	69	10	2	72	5.	7.	16	22	12	22	16	75	9.	77	78	77	!	13
	ոք	a.m.	89	.9	65	67	65	67	89	69	69	69	69	69	5	89	6	69	69	70	27	7.	73	23	12	2	74	7.4	74	74	14	75	!	10
,	May	·w ·ď	53	20	21	9	62	61	61	63	61	61	61	62	62	64	63	63	63	63	62	40	65	49	99	67	67	33	89	89	69	72	2	63
and 4 p. m.	М	a. m.	52	2	22	21	90	61	90	61	9	28	29	29	90	62	62	63	62	61	62	29	63	99	64	99	67	37	67	61	89	88	89	62
	-11	p.m.	39	7	9	4 0	7	42	42	4	4	42	43	45	45	45	46	46	46	47	46	40	47	6	6	25	22	43	49	49	51	21	;	45
ely 8 a.	April	a.m.	38	2	4	39	33	40	42	40	40	42	43	43	45	45	46	45	46	45	46	46	46	48	8 :	48	22	20	48	48	49	20	;	45
roximat	March	p.m.	34	33	33	34	35	35	34	34	33	34	35	37	35	36	37	36	32	34	34	çç	36	36	34	88	33	35	36	35	۶	38	38	35
at app	Ma	a.m.	35	ç	35	*	35	34	34	32	34	34	34	32	32	35	32	36	33	34	\$ 3	4	31	36	9	32	35	35	36	34	34	36	34	35
rements	February	p.m.	33	32	32	32	33	34	34	34	33	34	34	33	35	32	33	34	34	33	34	5	32	34	¥.	34	34	62	34	34	;	;	:	33
measu	Febr	a.m.	34	32	34	34	33	34	32	32	32	34	33	33	35	33	33	83	33	33	33	22	34	34	¥.	34	33	65	34	34	;	;	:	33
Twice-daily measurements at approximately 8 a. m.	January	p. m.	32	35	34	32	32	35	32	33	33	33	33	33	33	33	33	32	32	32	33	2	33	34	8	34	34	33	33	33	33	32	33	33
/Twic	Jan	a.m.	33	34	8	32	32	34	32	32	33	32	32	32	32	32	33	32	32	33	88	88	32	33	33	33	ຂ	65	33	33	33	33	33	33
	December	p.m.	38	ŝ	8	36	36	36	34	33	32	35	34	34	8	34	34	34	33	33	83	<u></u>	33	88	8	34	34	34	32	32	34	34	34	32
	Dece	a.m.	39	ŝ	33	8	36	36	33	33	33	33	33	34	33	33	32	34	33	33	35	g 	33	32	8	8	33	34	35	34	33	33	34	34
	November	p.m.	23	2	24	45	45	46	4	44	4	43	43	43	4	43	42	41	42	42	43	*	43	£.	£	43	42	43	41	41	41	4	:	44
	Nove	a. m.	23	7	20	48	41	46	44	44	4	43	43	43	43	42	4	40	41	42	2;	ŧ.	44	43	£ :	\$	42	43	40	40	40	40	;	44
	oper	p.m.	63	ç	9	99	65	63	62	61	9	8	61	62	62	62	8	. 63	63	62	61	2	28	20	20	20	28	57	22	22	24	24	24	9
	Octo	a.m.	63			65			_		90		99			_					61		29				28					22		90
	Day	fact.	1	2	3	4		9	7.	8	6	10	11	12	13	14	15	16	17	18.	19		21	22	23	24	cz	26	27	28.	29	30.	31	Average

HUDSON RIVER BASIN

HUDSON RIVER BASIN -- Continued

HUDSON RIVER AT GREEN ISLAND, N. Y.

LOCATION.--At east shore of Green Island, Albany County, at Ford Motors Co. powerplant, opposite Troy barge locks.

DRAINAGE AREA.--8,090 square miles, approximately at gaging station (including that above site of auxiliary gage).

RECORDS AVAILABLE.--Water temperatures: April 1947 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 83°F Aug. 4-6; minimum, freezing point Jan. 15,16, 18-20.

EXTREMES, 1947-55.--Water temperatures: Maximum, 84°F Aug. 8,9, 1949; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Temperature (°F) of water, water year, October 1954 to September 1955

				Once-dail:	y measure	ement at a	approxima	itely 8 a. i	n.7			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	53	38	33	33	34	40	57	68	77	82	75
2	63	52	38	33	33	34	40	58	68	78	82	74
3	63	52	37	33	33	34	41	58	67	80	82	74
4	63	51	36	33	33	33	41	59	67	81	83	74
5	64	51	35	33	33	33	42	60	67	81	83	74
6	64	50	34	33	33	33	42	60	67	82	83	75
7	63	50	34	33	33	34	42	60	67	82	82	74
8	62	49	35	33	33	34	43	59	68	82	82	73
9	62	49	35	33	33	33	44	59	68	82	81	72
10	62	48	36	33	33	33	44	59	68	82	79	71
11	63	48	36	33	33	34	45	59	67	83	77	71
12	63	48	36	33	33	35	45	60	67	82	78	71
13	64	47	35	33	33	35	46	61	68	82	76	70
14	64	46	35	33	33	36	46	61	68	82	76	69
15	64	45	35	32	33	36	46	62	68	81	77	68
16	64	45	36	32	33	35	46	62	68	81	77	69
17	63	45	36	33	33	36	46	63	68	82	78	70
18	63	45	35	32	33	35	45	63	68	82	78	71
19	62	46	35	32	33	35	46	64	69	82	79	71
20	62	46	34	32	33	36	47	64	69	81	79	71
21	61	45	33	33	33	36	47	65	70	81	79	71
22	61	44	33	33	33	36	48	65	70	82	80	70
23	60	43	33	33	34	36	48	66	71	82	80	69
24	59	42	34	33	34	36	49	66	72	82	78	69
25	59	42	33	33	34	36	50	67	73	82	77	68
26	58	41	33	33	34	36	52	67	73	81	77	68
27	57	41	34	33	34	36	53	67	74	82	76	67
28	57	40	34	33	34	37	54	67	75	82	76	67
29	56	40	34	33		37	55	67	76	80	75	66
30	55	39	33	33		38	56	68	76	78	75	66
31	54		33	33		39		68		79	75	
ver- age	61	46	35	33	33	35	46	63	70	81	79	71

HUDSON RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN HUDSON RIVER BASIN IN NEW YORK

				່ວ	nemical an	alyses, in	parts per	million, w	ater year (Chemical analyses, in parts per million, water year October 1954 to September 1955	to Septem	ber 1955						
	- Constant			Cal-	Mag-	,	Potas-	Bicar-	;		:		Dissolved solids	Hardness as CaCO ₃		Specific conduct-		
Date of collection	(cfs)	(8102)	(Fe)	Cium (Ca)	nesium (Mg)	(Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	(C1) (F)	(NO ₃)	(residue on evap- oration at 180°C)	Total	Non- carbon- ate	ance (micro- mhos at 25°C)	Hd	Color
							WEST	CANADA C	WEST CANADA CREEK AT HINCKLEY	HINCKLEY								
Jan. 19, 1955	a 842	6.3	0.12	5.2	1.0	2.4	4	11	6.6	1.0	0.1	1.6	45	17	8	45.1	6.9	&
							ž	CHAWK RI	MOHAWK RIVER AT COHOES	OHOES								
Jan. 5, 1955	934	16	0.17	58	4.6	5.5	1.3	84	22	5.4	0.0	3.3	136	91	22	211	7.5	18
a Daily mean discharge.																		

DELAWARE RIVER BASIN

DELAWARE RIVER AT TRENTON, N. J.

LOCATION.--At Calhoun Street Bridge, Bucks County, Pennsylvania side, 200 feet downstream from gaging station which is half a mile upstream from Assunpink Creek. Chemical-quality samples collected at Morrisville filter plant; sediment samples normally collected at midstream from bridge.

October 1944 to September 1955. DRAINAGE AREA. --6, 780 square miles. ' RECORDS AVAILABLE. --Chemical analyses:

National Control of the Control of t

		Color	_	_				_	•					_	10		_
			L	_		_	0					_	_		4	2.	_
		Hd	-	-	-	-	-	7.1	<u>.</u>	-	۲-	2	-	7.4	-	2.5	_
	Specific conduct-	ance (micro- mhos at 25°C)	201	223	195	138	127	109	114	127	109	116	129	155	164	135	124
	co,	Non- carbon- ate	35	4	35	26	24	77	20	23	19	16	22	19	56	ដ	7.7
	Hardness as CaCO,	Calcium, mag- neslum	49	88	74	48	45	4	41	48	g	#	49	99	61	49	2
	Dissolved solids	(residue on evap- oration at 180°C)	118	135	109	18	88	77	28	80	22	100	88	101	104	88	200
er 1955	Nitrate	(NO ₃)	4.2	4.8	2.0	4.1	4.1	4.1	3.4	4.0	3.7	2.4	3.5	4.6	9.6	4.7	4.8
Septemb	Fluoride	(F)	0.2	٦:	٦.	-:	Ξ.	-:	-:	2.	٦:	7.	-:	Τ.	-:	- ;	-:
Chemical analyses, in parts per million, water year October 1954 to September 1955	Chloride	(CI)	10	12	11	2.0	5.5	3.2	5.0	4.0	4.5	3.5	2.0	5.5	5.5	4.5	2.0
year Oct	Sulfate	(80°)	30	33	59	26	24	23	22	24	21	20	24	26	28	23	21
lion, water	Bicar-	bonate (HCO ₃)	53	29	48	83	26	23	56	30	52	34	33	45	43	\$	32
er mill	Potas-	Sium (K)															_
, in parts		(Na)	6.5	7.2	5.9	6.5	5.7	5.1	6.1	5.2	5.8	5.5	5.9	9.3	7.4	6.1	4.4
l analyses	Mag-	(Mg)	7.0	 	6.5	4.1	3.7	3.1	8.3	3.7	3.5	4.0	4.1	4.4	5.1	4.0	4.2
Chemica	Cal-	(Ca)	20	21	19	13	12	==	11	13	10	11	13	15	16	13	23
	Iron	(Fe)	0.03	20.	8	95	8	10.	5	.02	8	.02	9.	6	70.	8	2,
	Silica	(SiO ₂)	2.8	7.3	3.1	8.9	8.8	5.4	6.0	8.9	6.0	28	9.6	15	6.0	5.5	2.6
	Mean	discharge (cfs)	2,480											5, 370	7,070	8, 590	11.900
		Date of collection	ct. 1-10, 1954	oct. 11-20	oct. 21-31	lov. 1-10	lov. 11-20	Vov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Tan. 1-10, 1955	tan. 11-20	lan. 21-31	reb. 1-10	7eb. 11-20	eb. 21-28

Oct. Oct. Nov. Nov. Nov. Dec. Jan. Jan.

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT TRENTON, N. J.--Continued

Color 5,000,000 ; 핂 Specific conductance (micro-mhos at 25°C) 95.8 90.4 97.1 281188 143 Non-carbon-ate ន្ត 451158 232222 2228222 Hardness as CaCO, Calcium, mag-nesium 2288822 22 88 88 88 8834228 (residue on evap-oration at 180°C) Dissolved solids 92 84 117 130 131 Chemical analyses, in parts per million, water year October 1954 to September 1955 -- Continued Nitrate (NO₃) 3.3 Chloride Fluoride 5 E 40000 <u>ਹ</u> Sulfate (SO₄) 22 222222 Bicar-bonate (HCO₃) 2828484 39 8488844 480224 Potas-sium (K) 2.0 __6.5.E.9.__ 8 Sodium (Na) 5.4 Mag-nesium (Mg) 4.5 Cal-(Ca) 9.9 9.5 1.6 9.5 1.4 1.4 8865533 2 Fe) 822 9.0 85838 288822 2882487 Silica (SiO₂) 6.4 Mean discharge (cfs) 20,900 18,300 23,500 12,400 13,500 23,500 9,510 5,560 4,490 5,220 6,060 2,780 2,970 2,340 2,180 15,600 88,500 29,700 9,460 5,940 6,820 11, 150 Apr. 1-10 Apr. 11-20 Apr. 21-30 May 1-10 May 11-20 May 21-31 June 1-10
June 11-20
June 21-30
July 1-10
July 11-20
July 21-30 Aug. 1-10 Aug. 11-14 Aug. 15-20 Sept. 1-10 Sept. 1-10 Mar. 1-10, 1955.... Mar. 11-20.... Weighted average ... Date of collection Sept. 21-30

DELAWARE RIVER BASIN--Continued DELAWARE RIVER AT TRENTON, N. J.--Continued

Temperature (*F) of water, October 1954 to January 1955

-																																	1	
	September	min	_																				_		_									
	Sep	max																	_													_		
	August	mtm																							_									Ц
	'nΨ	max																																
	July	min																																
	Ju	max																																
	е	min								_																								
	June	max			_																		•											
aph/	_	min		_	_				_					_									_		_								-	П
rmogr	May	max		_	_									_									_								_			
ted the	_	min							_																				-	-			-	H
is actua	April	\vdash	-									_		_		_		_							_	_								
g snon		n max	L											_	_										_					_				
contin	March	x min		_																_					_	_								
hment,		max		_						•••													_		_	_								Н
re attac	February	t min	_					_									_								_			_					-	L
peratu	Fe	max	_								_			_									_	_										
ith tem	January	min	36	36	8 5	38	8	3 %	: E	=	88		32	ළ -	쯦	2	31	5	-	-	-		=	3	3	8	-	;	-	-	:	-		*
\overline{R} ecorder with temperature attachment, continuous gas actuated thermograph \overline{I}	Ja	max	88	33	8 8	37	2	5 %	. 4	25	38		36	8	8	35	32	32	8	32	2	88	32	8	3	8	:	-	:	:	1	;	ļ	#
/Reco	December	mim	40	8 5	5 8	3 8	37	5 5	38	2 5	3 5		35	32	33	8	;	;	;	:	-	:	;	:	:	:	1	:	32	2	5	8	37	:
	ээд	max	40	4 8	3 6	3 5	2	5 2	; #	8	32		32	34	34	g	ł	;	:	;	i	:	;	:	;	÷	!	:	8	25	8	38	8	:
	nber	min	45	46	£ 7	4	43	3 4	1 4	4	‡		4	4	4	40	4	14	4	45	47	8	49	47	4	42	42	4	40	4	4	4	:	43
	November	max	48	8 4	4	9	44	4 8	45	45	43		43	4	43	43	4	44	5	47	48	28	52	49	42	44	43	42	1 4	4	4	43	:	45
	Je r	min	11	22	9 5	: 8	9	2.0	. 82	200	6		4	99	8	8	49	6	2	28	č	28	53	23	52	23	23	20	26	52	22	48	47	99
	Octok	max	75	15	5 £	42	9	9 %	9	62	65		2	23	16	73	20	69	8	64	g	2 6	82	28	28	19	29	20	9	20	7	25	8	99
	Лоч	Lay.		2	4	5		4			10.		TT	12	13	14	15	16.	17.	18.	6	20.		22.	23		25		27	28	29.	30	•	Average



NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT TRENTON, N. J. -- Continued

Suspended sediment, water year October 1954 to September 1955 October | November | I

		October			November		December							
	Mean	Suspende	d sediment	Mean	Suspende	d sediment	Mean	Suspende	d sediment					
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons					
-	charge	concen-	per	charge	concen-	per	charge	concen-	per					
	(cfs)	tration (ppm)	day	(cfs)	tration	day	(cfs)	tration	day					
-	0.000	(ppin)		0.000	(ppm)			(ppm)						
1	2,320 2,240	2	13	3,220	6	52 24	17,800	19	481					
2 3	2,930	ſ *	13	2,960 5,100	26	s 410	15,400 13,800	6	249					
4	2,790	ί.		11,200	108	s 3, 890	12,300	3	101					
5	2,340			22,200	145	s 8, 650	11,300	IJ ·						
	'	2	13	· ·		,	1 ′							
6	2,270	k i		18,800	47	2,390	9,840	ħ						
7	2,680	l .		15,100	17	693	8,360	} 4	95					
8	2,680 2,500	4	28	12,200	9	296	8,160	K						
9 10	2,080	Κ		10, 200 9, 300	4	110 100	7,910 9,300	11						
10	2,000		_	0,000	*	100	3,300	11 _						
11	2,030	1	5	8,560	4	92	8,870	} 3	6 8					
12	1,990	ו		7,910	3	64	8,410	11						
13	1,870	h.		7,050	1	19	7,430	IJ						
14	1,810	} 3	15	6,680	2	36	7,190	9	175					
15	1,990	ו		6,050	4	65	11,300	14	427					
16	3 640	10	100	5 000	ایا	ا م		1						
17	2, 640 2, 960	18 18	s 132 144	5,630	2 2	30	13,400	12	434 484					
18	3, 130	14	118	5,920 6,140	5	32 83	16,300	11 9	372					
19	2,680	4	29	5,840	2	32	15,300	17	840					
20	2,520	3	20	6,540	17	300	18,300 24,300	17	1,110					
	-	[-,		""	,		2,					
21	2,390	n l		18,700	218	s12,760	22,200	13	779					
22	2,570	} 3	20	25, 200	126	s9,560	16,600	8	359					
23	2,470	ו		36,600	124	12,300	14,400	ħ.						
24 25	2, 340 2, 340	n i		26,500	38	2,720	12,800	} 4	143					
20	2, 340	} 2	13	21,300	20	1,150	12,400	Y						
26	2,520	j		18,000	8	389	11 100	L						
27	2,270	3		15,700	6	254	11,100 9,570	3	80					
28	2,150	, ,	18	14, 400	5	194	8,870	U						
29	2,570		a 42	14, 400	6	233	9,250	3	75					
30	3,680	17	169	15,600	11	463	1 16.400	31	s1,540					
31	3, 340	8	72				27,700	97	s6,900					
Total.	77,090		1,083	383,000		57,391	406, 260	<u></u>	15,822					
		January			February			March						
1	26,900	32	2,320	3,500		a 19	12,400	7	234					
2	22,000	15	891	5,000		a 40	20,000 29,700	27	s1,680					
3	20,000	10	540	4,500		a 24	29,700	103	s8,260					
4	19,800	7	374	4,500		a 36	24,300	63	s 4, 500					
5	18,000	6	292	4,500		a 36	23,000	33	2,050					
6	16,400	6	266	5,000		a 81	22,200	15	899					
7	15, 900	6	258	13,000	145	5, 09 0	23,600	13	828					
8	15, 200	4	164	10,000	150	4,050	1 20,000							
9	12,800	4	138	0 770			20,800	6	337					
10	11,300			0,770	50	1,180	20,800 17,100	6 5	231					
۱, ا		4	122	8,770 8,770	50 15	1, 180 355	17,100 15,600	6						
11		4		8,770	15	1,180 355	17,100 15,600	6 5 4	231 168					
12	10, 400	1	122	8,770 9,520	15 63	1,180 355 1,610	17,100 15,600 16,200	6 5 4 5	231 168 219					
12	10, 400 10, 500	4		8,770 9,520 10,600	15 63 70	1,180 355 1,610 2,000	17,100 15,600 16,200 18,800	6 5 4 5 7	231 168					
13	10, 400 10, 500 9, 300 8, 980	1	122	8,770 9,520	15 63	1,180 355 1,610	17,100 15,600 16,200 18,800 22,400 21,400	6 5 4 5 7 13 15	231 168 219 355 786 867					
	10, 400 10, 500 9, 300	1	122	8,770 9,520 10,600 9,840	15 63 70 20	1,180 355 1,610 2,000 531	17,100 15,600 16,200 18,800 22,400	6 5 4 5 7 13	231 168 219 355 786					
13 14 15	10, 400 10, 500 9, 300 8, 980 8, 260	4	122 109	8,770 9,520 10,600 9,840 8,060 7,960	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17,100 15,600 16,200 18,800 22,400 21,400 19,200	6 5 4 5 7 13 15	231 168 219 355 786 867 985					
13 14 15	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310	4	122 109	8,770 9,520 10,600 9,840 8,060 7,960 8,310	15 63 70 20 13	1,180 355 1,610 2,000 531 283	17,100 15,600 16,200 18,800 22,400 21,400 19,200	6 5 7 13 15 17	231 168 219 355 786 867 985					
13 14 15 16	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470	4	122 109 92	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17,100 15,600 16,200 18,800 22,400 21,400 19,200 17,300 17,400	6 5 4 5 7 13 15 17	231 168 219 355 786 867 985 467 423					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100	4	122 109	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010 8,510	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17,100 15,600 16,200 18,800 22,400 21,400 19,200 17,300 17,400 19,000	6 5 4 5 7 13 15 17 17 9 6	231 168 219 355 786 867 985 467 423 308					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240	4	122 109 92	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010 8,510 7,960	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17,100 15,600 18,200 18,800 22,400 19,200 17,300 17,300 17,000 19,000 18,500	6 5 4 5 7 13 15 17 9 6 8	231 168 219 355 786 867 985 467 423 308 356					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100	4	122 109 92 79	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010 8,510	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17,100 15,600 16,200 18,800 22,400 21,400 19,200 17,300 17,400 19,000	6 5 4 5 7 13 15 17 17 9 6	231 168 219 355 786 867 985 467 423 308					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 500	4	122 109 92	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010 8,510 7,960 7,140 6,910	15 63 70 20 13 14	1,180 355 1,610 2,000 531 283 301	17, 100 15, 600 16, 200 18, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400	5 4 5 7 13 15 11 17 9 6 8 4 3	231 168 219 355 786 887 985 467 423 308 356 156					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 500 6, 140	4	122 109 92 79	8,770 9,520 10,600 9,840 8,060 7,960 8,310 8,010 8,510 7,960 7,140 6,910 6,870	15 63 70 20 13 14 10	1,180 355 1,610 2,000 531 283 301 224	17, 100 15, 600 18, 200 18, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 14, 400 13, 200 20, 000	6 5 4 5 7 13 15 17 9 6 8 4	231 168 219 355 786 867 985 467 423 308 356 156					
13	10, 400 10,500 9,300 8,980 8,260 8,310 7,470 7,100 7,240 7,430 6,500 6,140 6,410	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 960 7, 140 6, 870 9, 350	15 63 70 20 13 14 10 3	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 18, 200 18, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 14, 400 13, 200 20, 000	6 5 4 5 7 13 15 17 9 6 8 4 3 5 4 17 7	231 168 219 355 786 887 985 467 423 308 356 156 107 s 3, 430 s 18, 300					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 500 6, 140 6, 410 5, 630	4	122 109 92 79	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 140 6, 910 6, 870 9, 350 12, 800	15 63 70 20 13 14 10 3	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 18, 200 18, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 36, 600 40, 900	6 5 4 5 7 13 15 17 9 6 8 4 3 54 177	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500					
13	10, 400 10,500 9,300 8,980 8,260 8,310 7,470 7,100 7,240 7,430 6,500 6,140 6,410	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 960 7, 140 6, 870 9, 350	15 63 70 20 13 14 10 3	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 18, 200 18, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 14, 400 13, 200 20, 000	6 5 4 5 7 13 15 17 9 6 8 4 3 5 4 17 7	231 168 219 355 786 887 985 467 423 308 356 156 107 s 3, 430 s 18, 300					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 500 6, 140 5, 630 4, 880	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 960 7, 140 6, 910 6, 870 9, 350 12, 800 17, 300	15 63 70 20 13 14 10 3 3 30 69	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 16, 200 18, 800 22, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 20, 000 36, 800 40, 900 31, 500	6 5 4 5 7 13 15 17 19 6 8 4 3 54 179 112 49	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500 s 4, 240					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 140 6, 410 5, 630 4, 880	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 140 6, 910 6, 870 9, 350 12, 800 17, 300	15 63 70 20 13 14 10 3 3 30 69	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 16, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 36, 600 40, 900 31, 500 25, 800	6 5 4 5 7 13 15 17 19 6 8 4 179 112 49 27	231 168 219 355 786 867 985 467 423 308 356 1156 107 \$3,430 \$18,300 \$18,300 \$12,500 \$12,500 \$12,500					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 310 7, 470 7, 100 7, 240 7, 430 6, 500 6, 140 5, 630 4, 880	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 910 8, 910 6, 910 6, 970 9, 350 12, 800 17, 300	15 63 70 20 13 14 10 3 3 30 69 43 23	1,180 355 1,610 2,000 531 283 301 224 66	17, 100 15, 600 16, 200 18, 800 22, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 36, 600 40, 900 31, 500 25, 800 23, 100	6 5 4 5 7 13 15 17 19 6 8 4 3 54 179 112 49	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500 s 4, 240					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 210 7, 470 7, 100 7, 240 6, 500 6, 140 6, 410 6, 630 4, 880 4, 880	4 4 2	122 109 92 79 72 30	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 510 7, 140 6, 910 6, 870 9, 350 12, 800 17, 300	15 63 70 20 13 14 10 3 3 30 69	1,180 355 1,610 2,000 531 283 301 224 66 61 1,040 3,220 1,860 863	17, 100 15, 600 16, 200 18, 800 22, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 40, 900 31, 500 25, 800 23, 100 19, 900 17, 500	6 5 4 5 7 13 15 12 17 9 6 8 4 177 112 49 27 15 11 5	231 168 219 355 786 867 985 467 423 308 356 156 156 193 818,300 812,500 84,430 936 591 236					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 210 7, 470 7, 100 7, 240 6, 500 6, 140 6, 410 6, 630 4, 880 4, 880	4	122 109 92 79 72	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 910 8, 910 6, 910 6, 970 9, 350 12, 800 17, 300	15 63 70 20 13 14 10 3 3 3 69 43 23 10	1,180 355 1,610 2,000 531 283 301 224 66 61 1,040 3,220 1,860 863 327	17, 100 15, 600 16, 200 18, 800 22, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 40, 900 31, 500 25, 800 23, 100 19, 900 17, 500	6 5 4 5 7 13 15 17 9 6 8 4 17 7 112 49 27 115 5 5	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500 s 4, 240 1, 390 936 591 236 226 221					
13	10, 400 10, 500 9, 300 8, 980 8, 280 8, 280 7, 470 7, 100 6, 140 6, 500 6, 140 6, 410 6, 630 4, 880 4, 880 5, 420 4, 480 4, 400 4, 400	4 4 2 2	122 109 92 79 72 30	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 010 8, 510 7, 140 6, 910 6, 870 9, 350 12, 800 17, 300 16, 000 13, 900 12, 100	15 63 70 20 13 14 10 3 3 30 69 43 23 10	1,180 355 1,610 2,000 531 283 301 224 66 61 1,040 3,220 1,860 863 327 	17, 100 15, 600 16, 800 22, 400 21, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 20, 000 36, 600 40, 900 31, 500 25, 800 23, 100 19, 900 17, 500 15, 800 17, 500 15, 800 17, 500 15, 800	654457133157172968844377211249	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500 s 4, 240 1, 390 936 591 226 221 221 221					
13	10, 400 10, 500 9, 300 8, 980 8, 260 8, 210 7, 470 7, 100 7, 240 6, 500 6, 140 6, 410 6, 630 4, 880 4, 880	4 4 2	122 109 92 79 72 30	8, 770 9, 520 10, 600 9, 840 8, 060 7, 960 8, 310 8, 010 8, 510 7, 140 6, 910 6, 870 9, 350 12, 800 17, 300 16, 000 13, 900 12, 100	15 63 70 20 13 14 10 3 3 3 69 43 23 10	1,180 355 1,610 2,000 531 283 301 224 66 61 1,040 3,220 1,860 863 327	17, 100 15, 600 16, 200 18, 800 22, 400 19, 200 17, 300 17, 400 19, 000 16, 500 14, 400 13, 200 20, 000 40, 900 31, 500 25, 800 23, 100 19, 900 17, 500	6 5 4 5 7 13 15 17 9 6 8 4 17 7 112 49 27 115 5 5	231 168 219 355 786 867 985 467 423 308 356 156 107 s 3, 430 s 18, 300 s 12, 500 s 4, 240 1, 390 936 591 236 226 221					

s Computed by subdividing day.
a Computed from partly estimated concentration graph.

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT TRENTON, N. J .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April	,	<u> </u>	May	о образива	June						
		Suspende	d sediment			ed sediment			sediment				
Day	Mean dis-	Mean		Mean	Mean		Mean	Mean					
,	charge	concen-	Tons per	dis- charge	concen-	Tons	dis- charge	concen-	Tons				
	(cfs)	tration	day	(cfs)	tration	per day	(cfs)	tration	per day				
		(ppm)			(ppm)			(ppm)					
1	13,400	5	181	13,600	6	220	5,080	10	137				
3	13,100	5 6	177 199	12,100	8	261	6,180	16	267				
4	12,300 12,100	7	229	10,900	4 2	118 57	5,920	11 9	176 139				
5	12,300	8	266	10,600 9,570	2	52	5,710 5,080	9	123				
	,	1			_		",""						
6	12,500	6	202	8,820	1	24	4,610	5	62				
7	12, 100	9	294	8,460	3	69	4,300	1	12				
8	12,400	9	301	7, 430	2	40	4,420	3	36				
9 10	12,500 11,300	7	304 214	6,960	2 3	38 54	5,210	7 8	98 122				
10	11,300	' '	214	6,680	•	34	5,670	· •	122				
11	10, 200	6	165	7, 190	5	97	5,920	10	160				
12	9,730	14	368	6,870	4	74	5.840	ii	173				
13	10,900	15	441	6.320	4	68	5,870	14	260				
14	11,900	13	418	6,050	4	65	5,870 6,770	13	238				
15	14, 200	18	690	5,500	8	119	7,190	13	252				
16	16 700	35	1 500	5 000		ا ءه، ا	7 040	7	197				
17	16,700 17,900	25	1,580 1,210	5,080 4,610	12 6	165 75	7,240 6,140	7	137 116				
18	15,600	20	842	4,800	2	26	5, 250	4	57				
19	14,000	15	567	4,720	3	38	4,720	h i	•				
20	13,600	12	441	4, 490	6	73	4,610	4	48				
		l l] *]	40				
21	13,000	12	421	4, 450	4	48	4,120	K					
22	12,800	11	380	4,300	3	35	4,050	ll _ !	60				
23 24	12,600	11 12	374 392	3, 810	5	51	4,160	2	22				
25	12,100 11,200	13	393	3,880 5,000	4 8	42 108	4,160 3,950	K I					
20	11,200	1 10	555	0,000	Ů	100	3,500						
26	12,700	17	583	4,920	7	93	4,050	} 2	21				
27	15,500	19	795	4, 680	9	114	3,650	ו ע					
28	15,800	19	811	4,960	12	161	1 3 340	h. 1					
29	14,800	13	519	4, 610	11	137	3,240	} 2	17				
						94	3,060						
30	14, 200	10	383	4, 340	8		0,000	, 1					
31				4, 420	6	72							
Total.	393,430		383 14,140				150,510		2,889				
31				4, 420	6	72			2,889				
Total.	393,430	 July	 14,140	4, 420 200, 120	6	72	150,510	September					
1	393,430 3,000 2,820			1,900 1,900	6	72	150,510		418 368				
1 2	393,430 3,000 2,820	 July	 14,140	1,900 1,900	6 August	72 2, 688	12,900 12,400 11,800	September 12 11 11	418 368 350				
1 2 4	393, 430 3, 000 2, 820 3, 210 3, 210	July	14,140	1,900 1,900 1,620 1,730	6 August	72 2, 688	12,900 12,400 11,800 10,100	September 12 11 11 7	418 368 350 191				
1 2	393,430 3,000 2,820	July	14,140	1,900 1,900	August	72 2, 688	12,900 12,400 11,800	September 12 11 11	418 368 350				
1 2 4	3,000 2,820 3,210 3,210 2,850	July	14,140	1,900 1,900 1,620 1,730 2,220	6 August	72 2, 688	150,510 12,900 12,400 11,800 10,100 9,520	September 12 11 11 7 8	418 368 350 191 206				
1 2 3 4 6	393, 430 3,000 2, 820 3, 210 3, 210 2, 850 2, 590	July 2 4	14,140 16 33	1,900 1,900 1,620 1,730 2,220 2,160	August	72 2, 688	150,510 12,900 12,400 11,800 10,100 9,520 8,210	September 12 11 11 7 8	418 368 350 191 206				
1 2 3 4 5	393, 430 3,000 2,820 3,210 3,210 2,850 2,590 3,030	July 2 4	14,140 16 33	1,900 1,900 1,620 1,730 2,220 2,160 2,340	August 4 3	72 2,688 20 16	150,510 12,900 12,400 11,800 10,100 9,520 8,210	September 12 11 11 7 8 13 7	418 368 350 191 206 288 148				
123455	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 030 3, 240 2, 850	July 2 4	14,140 16 33	1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880	August	72 2, 688	150,510 12,900 12,400 11,800 10,100 9,520 8,210 7,810 7,760	September 12 11 11 7 8 13 7 3	418 368 350 191 206				
1 2 3 4 5	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 030 3, 240 2, 850	 July 2 4	14, 140 16 33	1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480	August 4 3	72 2,688 20 16	150,510 12,900 12,400 11,800 10,100 9,520 8,210 7,810 7,760 7,330	September 12 11 11 7 8 13 7	418 368 350 191 206 288 148 63				
31	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 030 3, 240 2, 850 2, 700	 July 2 4	14, 140 16 33	1, 900 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480 1, 920	August 4 3 2 4	72 2,688 20 16 14 21	150,510 12,900 12,400 11,800 10,100 9,520 8,210 7,810 7,760 7,330 6,820	September 12 11 11 7 8 13 7 3 5	418 368 350 191 206 288 148 63 99				
31	393, 430 3,000 2,820 3,210 3,210 2,850 2,590 3,030 3,240 2,850 2,700 2,760	July 2 4 5 5	14, 140 16 33 30 40	1,900 1,900 1,620 2,220 2,160 2,340 2,880 2,480 1,920 2,120	August 4 3 4 3 4 3 4 3	72 2,688 20 16 14 21	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 680	September 12 11 11 7 8 13 7 3 5	418 368 350 191 206 288 148 63 99				
11	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 850 2, 850 2, 850 2, 850 2, 850 2, 700 2, 760 2, 760 2, 760	 July 2 4	14, 140 16 33	1,900 1,900 1,900 1,620 2,220 2,160 2,340 2,880 2,480 1,920 2,120 3,840	August 3 4 3 56	72 2,688 20 16 14 21 17 s1,080	150, 510 12, 900 12, 400 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 8, 680 6, 100	September 12 11 11 7 8 13 7 3 5	418 368 350 191 206 288 148 63 99				
1	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 850 2, 850 2, 850 2, 850 2, 850 2, 700 2, 760 2, 760 2, 760	July 2 4 5 5	14, 140 16 33 30 40	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 1,920 2,120 2,120 2,120 2,120 2,120 2,120 2,120	August 4 3 4 3 6 4 4 56 600	72 2,688 20 16 14 21 17 s1,080 s51,100	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 780 7, 780 6, 820 6, 680 6, 100 5, 330	September 12 11 11 7 8 8 13 7 3 5 5	418 368 350 191 206 288 148 63 99 92				
31	3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 330 3, 240 2, 850 2, 700 2, 700 2, 700 2, 200 2, 200	July 2 4 5 5	14,140 16 33 30 40	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,880 2,480 1,920 2,120 3,840 28,500 28,400	August 4 3 4 3 56 600 225	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 6, 820 6, 100 5, 330 6, 140	September 12 11 11 7 8 8 13 7 3 5 5	418 368 350 191 206 288 148 63 99 92				
31. Total. 1. 2. 3. 4. 5	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 850 2, 850 2, 850 2, 850 2, 850 2, 700 2, 760 2, 760 2, 760	July 2 4 5 5	14, 140 16 33 30 40	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 1,920 2,120 2,120 2,120 2,120 2,120 2,120 2,120	August 4 3 4 3 6 4 4 56 600	72 2,688 20 16 14 21 17 s1,080 s51,100	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 780 7, 780 6, 820 6, 680 6, 100 5, 330	September 12 11 11 7 8 8 13 7 3 5 5	418 368 350 191 206 288 148 63 99 92				
31	3, 430 3, 000 2, 820 3, 210 2, 850 2, 590 3, 030 2, 850 2, 700 2, 700 2, 700 2, 370 2, 370 2, 980 2, 090 2, 040	July 2 4 5 5	14,140 16 33 30 40	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 480 2, 480 1, 920 2, 120 3, 840 28, 500 28, 500 28, 500 33, 300	August 4 3 4 3 56 600 225	72 2,688 20 16 14 21 17 s1,080 s51,100 s 18,100 s 23,700	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 6, 230	September 12 11 11 7 8 8 13 7 3 5 5	418 368 350 191 206 288 148 63 99 92				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 580 3, 240 2, 700 2, 700 2, 700 2, 700 2, 200 2, 900 2, 040 2, 0	July 2 4 5 5 4 4	14,140 16 33 30 40 28	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 480 2, 480 2, 120 3, 840 28, 500 28, 400 33, 300 23, 500 15, 600	6 August 4 3 5 6 6 6 0 2 2 5 2 5 6 7 4 4 1 1	72 2,688 20 16 14 21 17 s1,080 s51,100 s18,100 s23,700 s4,880 s1,730	150, 510 12, 900 12, 400 10, 100 9, 520 8, 210 7, 810 7, 780 7, 780 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 6, 230	September 12 11 11 7 8 13 7 3 5 5 2	418 388 350 191 206 288 148 63 99 92				
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 17. 18. 18. 17. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 3240 2, 850 2, 700 2, 700 2, 700 2, 370 2, 290 2, 290 2, 290 2, 290 2, 290 2, 290 2, 290 2, 370 2, 370 2, 290 2,	July 2 4 5 5	14,140 16 33 30 40	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 2,480 2,480 2,1920 2,100 2,840 2,400 33,300 23,500 15,600	August 4 3 2 4 3 56 600 225 225 74 41 87	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100 \$23,700 \$4,880 \$1,730 \$5,680	150, 510 12, 900 12, 400 11, 300 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 8, 230 6, 230	September 12 11 11 7 8 13 7 3 5 5 2	418 388 350 191 206 288 148 63 99 92				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 550 2, 550 2, 700 2, 760 2, 700 2, 760 2, 700 2, 290 2, 200 2, 200 2, 200 2, 200 2, 200 2, 200 2, 200 2, 200 2, 2	July 2 4 5 5 4 4	14,140 16 33 30 40 28	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480 1, 920 2, 120 3, 840 28, 500 28, 400 33, 300 15, 600 16, 900 163, 000	6 August 4 4 3 56 600 225 256 74 41 81 1,880	72 2,688 20 16 14 21 17 51,080 551,100 51,700 523,700 54,880 51,730 55,680 5848,000	150,510 12,900 12,400 11,800 10,100 9,520 8,210 7,810 7,760 7,330 6,820 8,680 6,100 5,330 6,140 6,910 6,230 6,230 5,800 5,210	September 12 11 11 7 8 13 7 3 5 5 2	418 368 350 191 206 288 148 63 99 92				
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 17. 18. 18. 17. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18	393, 430 3, 000 2, 820 3, 210 3, 210 2, 850 2, 590 3, 3240 2, 850 2, 700 2, 700 2, 700 2, 370 2, 290 2, 290 2, 290 2, 290 2, 290 2, 290 2, 290 2, 370 2, 370 2, 290 2,	July 2 4 5 4 4 4	14,140 16 33 30 40 28 23	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 2,480 2,480 2,1920 2,100 2,840 2,400 33,300 23,500 15,600	6 August 4 4 3 56 600 225 256 74 41 81 1,880	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100 \$23,700 \$4,880 \$1,730 \$5,680	150, 510 12, 900 12, 400 11, 300 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 8, 230 6, 230	September 12 11 11 7 8 13 7 3 5 5 2	418 388 350 191 206 288 148 63 99 92				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 590 3, 030 2, 850 2, 700 2, 700 2, 700 2, 370 2, 290 2, 090 2, 040 2, 020 2, 370 2, 370 2, 390 2, 040 2, 020 2, 370	July 2 4 5 5 4 4	14,140 16 33 30 40 28	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480 1, 920 2, 120 3, 840 28, 500 28, 400 33, 300 23, 500 16, 900 163, 000 279, 000	6 August 4 3 5 6 6 600 225 256 74 41 1 880 1, 360	72 2,688 20 16 14 21 17 s1,080 s1,100 s18,100 s23,700 s4,880 s1,730 s5,680 s1,730 s5,680 s1,730 s5,680 s1,087,000	150,510 12,900 12,400 11,800 10,100 9,520 8,210 7,810 7,760 7,330 6,820 8,680 6,100 5,330 6,140 6,910 6,230 6,230 5,300 5,210 4,800	September 12 11 11 7 8 13 7 3 5 5 4	418 368 350 191 206 288 148 63 99 92				
31	393, 430 3,000 2,820 3,210 2,850 2,590 3,030 2,850 2,700 2,700 2,700 2,370 2,290 2,090 2,040 2,020 2,090 2,040 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,1940 2,020 2,0	July 2 4 5 4 4 4	14,140 16 33 30 40 28 23	1, 900 1, 900 1, 900 1, 620 2, 160 2, 340 2, 480 2, 480 2, 480 1, 920 2, 120 3, 840 28, 500 28, 400 33, 300 23, 500 16, 900 163, 000 279, 000 88, 100 50, 700	6 August 4 4 3 56 600 225 256 74 41 81 1,880	72 2,688 20 16 14 21 17 s1,080 s51,100 s18,100 s18,100 s23,700 s4,880 s5,680 s5,680 s1,730 s5,680 s1,730 s54,800 s1,087,000	150, 510 12, 900 12, 400 11, 300 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 6, 240 6, 240 6, 240 6, 240	September 12 11 11 7 8 13 7 3 5 5 4	418 368 350 191 206 288 148 63 99 92 33				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 580 3, 030 3, 240 2, 850 2, 700 2, 760 2, 700 2, 290 2, 090 2, 020 2, 370 2, 290 2, 020 2, 370 2, 290 2, 090	July 2 4 5 4 5 5	14,140 16 33 30 40 28 23 24	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 480 2, 480 2, 480 2, 480 28, 500 28, 500 28, 400 33, 300 23, 500 16, 900 163, 000 279, 000 88, 100 50, 700 37, 800	6 August 4 3 5 6 600 225 256 74 1 87 1,880 1,360 62	72 2,688 20 16 14 21 17 81,080 851,100 81,100 823,700 84,800 81,730 85,680 848,000 848,000 85,087,000 53,500 13,700 6,330	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 5, 210 4, 800 5, 800 6, 410 4, 880	September 12 11 11 7 8 13 7 3 5 5 4	418 368 350 191 206 288 148 63 99 92				
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24.	393, 430 3, 000 2, 820 3, 210 2, 850 2, 590 3, 030 2, 850 2, 700 2, 700 2, 700 2, 700 2, 290 2, 090 2, 040 2, 020 2, 290 1, 940 2, 020 2, 480 2, 480 2, 790 2, 480 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 290 2, 240 2, 240 2, 240	July 2 4 5 4 4 4	14,140 16 33 30 40 28 23	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 2,480 2,480 2,480 33,300 28,500 16,900 163,000 279,000 88,100 37,800 37,800	August 4 3 2 4 3 56 600 225 256 74 41 87 1, 680 1, 360 225 100 62 44	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100 \$23,700 \$4,880 \$51,730 \$5,680 \$848,000 \$1,087,000 53,500 13,700 6,330 4,020	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 6, 230 6, 230 6, 230 6, 240 4, 800 5, 800 5, 210 4, 800 5, 800 6, 410 4, 880 5, 080	September 12 11 11 7 8 13 7 3 5 5 4	418 368 350 191 206 288 148 63 99 92 33				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 580 3, 030 3, 240 2, 850 2, 700 2, 760 2, 700 2, 290 2, 090 2, 020 2, 370 2, 290 2, 020 2, 370 2, 290 2, 090	July 2 4 5 4 5 5	14,140 16 33 30 40 28 23 24	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 480 2, 480 2, 480 2, 480 28, 500 28, 500 28, 400 33, 300 23, 500 16, 900 163, 000 279, 000 88, 100 50, 700 37, 800	6 August 4 3 5 6 600 225 256 74 1 87 1,880 1,360 62	72 2,688 20 16 14 21 17 81,080 851,100 81,100 823,700 84,800 81,730 85,680 848,000 848,000 85,087,000 53,500 13,700 6,330	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 5, 210 4, 800 5, 800 6, 410 4, 880	September 12 11 11 7 8 13 7 3 5 5 4	418 368 350 191 206 288 148 63 99 92 33				
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 117. 18. 19. 20. 21. 22. 23. 24. 25.	393, 430 3, 000 2, 820 3, 210 2, 850 2, 590 3, 030 2, 850 2, 700 2, 760 2, 760 2, 760 2, 790 2, 290 2, 090 2, 040 2, 020 2, 370 2, 290 2, 040 2, 020 2, 040 2, 020 2, 040 2, 020 2, 040 2, 020 2, 040 2, 020 2, 040 2, 020 2, 0370 2, 040 2, 020 2, 0370 2, 020 2, 0370 2, 0380 2, 040 2,	July 2 4 5 4 5 5	14,140 16 33 30 40 28 23 24	1,900 1,900 1,900 1,730 2,220 2,160 2,340 2,480 2,480 2,480 2,480 33,300 23,500 16,900 163,000 279,000 88,100 37,800 33,800 26,000	6 August 4 3 3 56 600 225 256 74 41 1, 360 1, 360 622 44 40	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100 \$23,700 \$4,880 \$1,730 \$5,680 \$848,000 \$1,087,000 \$1,087,000 \$3,500 13,700 6,330 4,020 2,810	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 5, 210 4, 800 5, 800 6, 410 4, 880 5, 800 6, 410 4, 880 5, 800 6, 410 6, 910	September 12 11 11 7 8 13 7 3 5 5 2 4 15	418 368 350 191 206 288 148 63 99 92 33 68				
31	393, 430 3, 000 2, 820 3, 210 2, 850 3, 240 2, 850 2, 700 2, 760 2, 700 2, 760 2, 700 2, 200 2, 370 2, 290 2, 900	July 2 4 4 5 4 4 4 4 4 4 4 4 5 4 4	14,140 16 33 30 40 28 23 24	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480 1, 920 2, 120 3, 840 28, 500 28, 400 33, 300 279, 000 88, 100 50, 700 37, 800 32, 800 20, 500 20, 500	6 August 4 3 5 6 6 600 225 256 74 41 87 1, 880 1, 360 225 100 62 44 40 29	72 2,688 20 16 14 21 17 s1,080 s1,100 s18,100 s23,700 s4,880 s5,700 s4,880 s1,730 s5,680 s1,730 s5,680 s1,730 s4,000 s1,087,000 53,500 13,700 6,330 4,020 2,810 1,610	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 8, 680 6, 100 5, 330 6, 140 6, 910 6, 230 6, 230 5, 800 6, 230 5, 800 6, 240 4, 800 5, 800 6, 410 4, 880 5, 800 6, 410 8, 820 8, 060	September 12 11 11 7 8 13 7 3 5 5 5 4 4 15 13	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283				
31. Total. 1	393, 430 3, 000 2, 820 3, 210 2, 850 2, 550 3, 324 2, 850 2, 760 2, 760 2, 700 2, 370 2, 290 2, 090	July 2 4 5 4 5 5	14,140 16 33 30 40 28 23 24	4, 420 200, 120 1, 900 1, 900 1, 730 2, 220 2, 160 2, 380 2, 480 2, 480 28, 500 28, 500 28, 500 28, 500 16, 900 16, 900 16, 900 16, 900 16, 900 16, 900 279, 900 88, 100 50, 700 33, 800 26, 600 20, 500 17, 000	6 August 4 3 56 600 225 256 74 41 87 1,880 1,380 62 44 40 29 20	72 2,688 20 16 14 21 17 81,080 851,100 8 18,100 8 19,730 8 1,730 8 1,730 8 1,730 8 1,730 8 1,730 8 1,730 8 1,730 8 1,730 8 1,87,000 8 1,087,000 8 1,087,000 13,700 6,330 4,020 2,810 1,610 918	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 780 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 6, 230 6, 230 5, 800 6, 410 4, 880 5, 800 6, 410 4, 880 6, 820 8, 060 7, 620	September 12 11 11 7 8 13 7 3 5 5 2 4 15 13 9	418 368 350 191 206 288 148 63 99 92 33 68				
31	393, 430 3, 000 2, 820 3, 210 2, 850 2, 580 3, 240 2, 850 2, 700 2, 760 2, 700 2, 700 2, 200 2, 200 2, 200 2, 2, 200 2, 2, 370 2, 290 2, 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 370 2, 290 2, 290 2, 290 2, 370 2, 290 2, 290 2, 2, 290 2	July 2 4 4 5 4 4 4 4 4 4 4 4 5 4 4	14,140 16 33 30 40 28 23 24 32 24	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 880 2, 480 1, 920 2, 120 3, 840 28, 500 28, 400 33, 300 279, 000 88, 100 37, 800 37, 800 37, 800 37, 800 37, 800 26, 500 27, 000 20, 500 17, 000 14, 600	6 August 4 3 5 6 600 225 256 74 41 880 1,360 225 100 62 44 40 29 20 19	72 2,688 20 16 14 21 17 81,080 861,100 818,100 818,100 81,730 85,680 814,730 85,680 81,730 81,087,000 63,3700 13,700 6,330 4,020 2,810 1,610 918 749 510	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 760 7, 330 6, 820 8, 680 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 6, 240 4, 800 5, 800 5, 800 6, 410 4, 880 5, 800 5, 800 7, 470	September 12 11 11 7 8 13 7 3 5 5 5 4 15 13 9 9 7	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283				
31	393, 430 3, 000 2, 820 3, 210 3, 220 2, 850 2, 590 3, 030 2, 850 2, 700 2, 700 2, 370 2, 290 1, 940 2, 020 2, 480 2, 980 2, 480 2, 980 2, 480 2, 980	July 2 4 4 5 4 4 4 4 4 4 4 4 5 4 4	14,140 16 33 30 40 28 23 24 32 24	4,420 200,120 1,900 1,900 1,730 2,220 2,160 2,340 2,880 2,480 1,920 2,120 3,840 28,500 28,400 33,300 23,500 16,900 163,000 279,000 88,100 279,000 88,100 279,000 279,000 279,000 20,500 20,500 21,600 21,600 22,600 20,500 21,600 21,	August 4 3 2 4 3 56 600 225 256 74 41 3, 360 1, 360 225 244 40 29 20 19 15 12	72 2,688 20 16 14 21 17 s1,080 s51,100 s18,100 s18,100 s18,100 s18,730 s5,680 s4,880 s1,730 s5,680 s4,880 s1,087,000 6,330 4,020 2,810 1,610 918 749 510 376	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 780 7, 330 6, 820 6, 680 6, 100 5, 330 6, 140 6, 910 6, 230 6, 230 5, 800 6, 410 4, 880 5, 800 6, 410 4, 880 6, 820 8, 060 7, 620	September 12 11 11 7 8 13 7 3 5 5 5 4 4 15 13 9 9	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283 185 182				
31	393, 430 3, 000 2, 820 3, 210 2, 850 3, 210 2, 850 3, 240 2, 850 2, 700 2, 760 2, 700 2, 370 2, 290 2, 020 2, 370 2, 290 2, 040 2, 370 2, 400 2, 400 2, 370 2, 400 2, 2020 2, 400 2, 2020	July 2 4 5 4 4 5 4 4 4 4 4 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	14,140 16 33 30 40 28 23 24 24 23 24	4, 420 200, 120 1, 900 1, 900 1, 620 1, 730 2, 220 2, 160 2, 340 2, 380 2, 480 2, 120 3, 840 28, 500 28, 400 33, 300 21, 500 16, 900 163, 000 279, 000 88, 100 20, 500 17, 000 12, 800 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600 11, 600	6 August 4 3 5 6 600 225 256 74 11 87 1, 880 1, 360 62 44 40 29 20 115 112 8	72 2,688 20 16 14 21 17 \$1,080 \$51,100 \$18,100 \$23,700 \$4,880 \$51,730 \$5,680 \$1,730 \$5,680 \$1,730 \$6,330 4,020 2,810 1,610 918 749 510 376 238	150, 510 12, 900 12, 400 10, 100 9, 520 8, 210 7, 810 7, 780 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 6, 140 6, 910 4, 800 5, 800 6, 140 6, 910 4, 800 5, 800 6, 140 6, 910 8, 800 6, 140 6, 910 8, 800 6, 140 6, 910 9, 800 9, 140 9, 910 9,	September 12 11 11 7 8 13 7 3 5 5 5 4 4 15 13 9 7 5 5	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283 185 185 185 185 185				
31	393, 430 3, 000 2, 820 3, 210 3, 220 2, 850 2, 590 3, 030 2, 850 2, 700 2, 700 2, 370 2, 290 1, 940 2, 020 2, 480 2, 980 2, 480 2, 980 2, 480 2, 980	July 2 4 5 4 4 5 4 4 4 4 4 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	14,140 16 33 30 40 28 23 24 24 23	4,420 200,120 1,900 1,900 1,730 2,220 2,160 2,340 2,880 2,480 1,920 2,120 3,840 28,500 28,400 33,300 23,500 16,900 163,000 279,000 88,100 279,000 88,100 279,000 279,000 279,000 20,500 20,500 21,600 21,600 22,600 20,500 21,600 21,	August 4 3 2 4 3 56 600 225 256 74 41 3, 360 1, 360 225 244 40 29 20 19 15 12	72 2,688 20 16 14 21 17 s1,080 s51,100 s18,100 s18,100 s18,100 s18,730 s5,680 s4,880 s1,730 s5,680 s4,880 s1,087,000 6,330 4,020 2,810 1,610 918 749 510 376	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 780 7, 780 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 6, 140 4, 880 5, 210 4, 800 5, 800 6, 410 6, 820 8, 680 6, 820 7, 620 7, 470 7, 570	September 12 11 11 7 8 13 7 3 5 5 5 4 15 13 9 9 7 5	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283 185 182 143 115				
31. Total. 1. 2. 3. 4. 5. 6. 7. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 117. 18. 19. 20. 21. 22. 22. 24. 25. 27. 28. 29. 30. 31. Total. Total.	393, 430 3,000 2,820 3,210 2,850 2,500 3,020 2,850 2,700 2,760 2,760 2,370 2,290 2,090 2,040 2,020 2,370 2,480 2,090 2,480 2,000 2,200 2,200 2,400 2,200 2,400 2,200 2,400 2,200 2,400 2,200 2,400 2,200 2,	July 2 4 4 5 4 4 year (cfs	14, 140 16 33 30 40 40 28 23 24 24 23 22 853 days)	4,420 200,120 1,900 1,900 1,730 2,220 2,160 2,340 2,880 2,480 2,880 2,480 33,300 23,500 16,900 163,000 279,000 88,100 279,000 88,100 33,800 26,000 20,500 17,000 11,600	6 August 4 4 3 56 600 225 256 74 41 71,880 1,380 1,380 225 44 40 29 20 19 15 12 8	72 2,688 20 16 14 21 17 81,080 81,100 81,100 81,730 81,100 81,730 81,800 81,730 81,987,000 6,330 4,020 2,810 1,610 918 749 510 376 238 2,126,219	150, 510 12, 900 12, 400 11, 800 10, 100 9, 520 8, 210 7, 810 7, 760 7, 330 6, 820 6, 820 6, 100 5, 330 6, 140 6, 910 6, 230 5, 800 5, 210 4, 800 5, 210 4, 800 5, 210 4, 800 6, 410 4, 880 5, 800 6, 410 7, 620 7, 470 7, 570 8, 510 222, 300	September 12 11 11 7 8 13 7 3 5 5 5 4 4 15 13 9 7 7 5	418 368 350 191 206 288 148 63 99 92 33 68 57 59 276 283 185 185 185 185 185				

s Computed by subdividing day.

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT TRENTON, N. J.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decanation: P. pipette; S. siewe; N. in native water;

		Methods of analysis	•	BWCM BWCM BSWCM
			1.000	
			0. 500	99 100 96
			0.350	
		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350 0.500 1.500	98 98 83
		tze, in m	0.125	98 11.
rzed)		ndicated s	0.062	90 90 61
ally dispe	ediment	ner than in	0.031	80 80 56
mechanic	Suspended zediment	Percent fü	0.016	66 67 30
rsed; M,	Š	_	0.008	26 25 25
ally disper			0.004	21 51 21
, chemic			0.002	14
 W, in distilled water; C, chemically dispersed; M, mechanically dispersed) 		Concentration of suspension	analyzed (ppm)	254 380 1,490
W, in d		Concentration	of sample (ppm)	163 48 971
	Water	tem-	ature (°F)	
		Discharge (efe)	<u> </u>	37,800 31,000 288,000
		Time		1:50 p.m. 1:30 p.m. 2:40 p.m.
		Date of collection		Mar. 22, 1955 Mar 25 Aug. 20

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT BRISTOL, PA. -BURLINGTON, N. J. BRIDGE

Chemical characteristics of RECORDS AVAILABLE.—Chemical analyses: August 1949 to September 1955.

EXTREMES, 1954-55.—Water temperatures: Maximum, 83°F July 21-28; minimum, freezing point on many days during December to February.

Water temperatures: October 1954 to September 1955.

REMARKS.—Semperatures october 1954 to September 1955.

REMARKS.—Semples taken at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical cha Delaware River water, Trenton, N. J. to Marcus Book, Pa.

Dis-solved oxygen 2.00 8.00 9.00 oxygen demand a chemical 22224 Color 1.8.7. 품 Specific conductmhos at 25°C) micro-206 211 199 96.2 ance 5 1 1 2 5 5658 carbon-8483 8228 2222 ate Hardness as CaCO, Calcium, mag-nesium 343 23 3254 2444 Chemical analyses, in parts per million, water year October 1954 to September 1955 on evap-oration Dissolved solids (residue at 180°C) 25 25 62 54 62 62 **\$**188 Nitrate (*0× 3.0 Fluo-ride (F) ---0.000 4.0 음을 한 Sulfate 80 37 37 16 2433 2222 Bicar-bonate (HCO₃) **4 % 2 2 2** 2222 4448 Po-stum (K) 2.22. œ œ ಟ 2 2 2 2 Sodium (Na 23.246 4 6 8 8 8 5.29 Mag-ne-stum (Mg) Cal-(Ca) 8 12 18 8.7 2122 1212 85.588 8822 0.05 0.05 0.05 0.05 Fe) (Sio,) Silica 0.8.6.8 Trenton (cfs) Discharge 2,340 22,200 15,400 19,800 12,700 29,700 12,300 10,900 6, 180 2, 870 1, 970 7, 810 Feb. 8 Mar. 3 Apr. 5 May 3. June 2 Date of collection Oct. 5, July 5

a Samples taken approximately 3 feet from surface

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT BRISTOL, PA.-BURLINGTON, N. J. BRIDGE--Continued

1	1																																
nber	min	11	22	2	F	11	E	Z 8	2	2	7	7	20	;	;	;	:	1	:		: :	:	1	. :	;	ŀ	ł	;	:	1	;	;	;
September	max	7.2	25	22	22	12	-	7 6	2	22	12	F	11	;	;	;	1		-		1			;	;	;	;	:	;	;	1	1	
# #	min	80	8	8	8	80	ë		Z :	8	43	42	62	7.7	23	23	13		2 2	: :	2 ;	:	-	:	23	72	12	11	E	2	2	2	20
August	max	81		8	28	81	6	20 00	78	₩		&	-62	- 62	77	23	23		. 4	: :	* :	1			74	23	72	12	72	12	11	E	-
_	min 1	92	-	E	28	42		9 2	-	-	 	81	81	8	. 2	8	8	6	8 8	3 2					23	82	82	82	82	82	8	8	6
July	max	7.7	77	- 22	29	8	-		7		82	82	82	82	18	18	81	-	-		70	828		3 6	83	83	83	83	83	83	82	18	-
L	min n	7.5		2	- 69	- 8	_		20		- 2	- 29	87	- 99	98	99	99			-	9 5		- 62		14	12	16	- 22	- 22	16	91	91	_
Липе	max	73	72	F	2	69		20 20	_	_	_		_		_	_	67		_	_	_	: 22		_	_		18	_		92	_		
	Н	25	53	22	26	88	-	90	70	62	63	63	62	62	62	62	63	-;	# 7 F	,	* 64	64	2		67	89	69	- 02	- 12	71	12	72	ç
May	ıx min	53	22	26	28	8	- 6	29	64	65	64	64	63		63	63	25			3 6	65	65	88	3 6		9	20	-12	-22	72	73	13	:
-	n max	40	41	43	- 46	47		47	2	- 63	-8	2	- 8	- 22	25	21	22			3 5	2 5	53.5		F 15	22.	100	26	99	7	- 23	25	22	_
April	mim	41	_	9	-	41		20 0	_							_	25		_			2.5					22	_	_			25	
L	max	36		_	_		_		_	_			- 85	_	_		£ 2						_				14					38	_
March	min	L	_		_			5 6	_			_			_					_		4 4			_	_	_						_
	max	37		_	_				_			_			_	_	4		_	_	_	4 4		_		_	41				_	8	_
February	min	32	_	_			_	E :	_	_				_			88	-	38	3 3	* 2	38		5.5	. 25			37	98	38	: :	!	
Feb	max	32	32	32	32	32	-	E :	22	32	32	33	25		5	75	8	•	3 3	5	400	37	-	5 8	2	2	88	8	37	38	_	-	
Jamary	min	37	31	37	88	88	-	37	38	35	34	34	55	£	2	32	32		: :	3 6	2 6	3 8	-	38	8	2	88	33	67	. 65	33	33	
Jan	max	38	88	88	38	38	5	8 1	34	8	35	34	34	75	8	8	38	8	3 8	3 6	3 8	3 8	: :	3 8	8 8	8	88	85	25	. 65	33	8	
nber	mim	41	\$	38	38	38		26	35	33	33	33	33	8	34	34	36	6	5 8	3 8	8 8	8 %			2	2	35	2	8	* #	32	37	•
December	max	41	4	\$	39	38	;	8 3	36	32	88	33	25	4	55	98	31	ç	3 9	3 8	2 2	8 8	3	2 2		2	8	33	25	32	37	8	;
nber	min	24	23	21	48	47	;	949	5	\$	43	43	42	42	5	42	42	4.5	7 6 7	9 9	3 4	46	9	48	4	. 4	43	43	42	1 2	42	41	
November	max	22	25	23	25	6		4	46	45	4	44	43	5	4	. 2	£	•	7 7	;	£ 4	47	9	9 9	3 4	47	45	43	2	42	42	42	
ber	mim	67	8	89	69	20	í	2.5	8	67	99	99	99	99	9	67	67	- 5	9	3 8	6 4	3 5		3 2	5 6	2	28	65	65	8	22	26	
October	max	88	8	2	7.1	17	;	-	2	8	67	67	67	. 2	2 2	9	8	9	6 6	5 6	99	8 6	6	3 2	2	2	8	9	9	20	28	22	
į	, Cay	1	2		4.	5				20	9	10		6	13	4	15	92	17			20.	_	22	23	24.	5	36	27	28	29	30.	

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT TORRESDALE INTAKE, PHILADELPHIA, PA.

RECORDS AVAILABLE. --Chemical analyses: August 1949 to September 1955.
REMARKS.--Samples taken at center of stream approximately 3 feet from bottom. Afditional data are published in WSP 1262. Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa.

Chemical analyses, in parts per million, water year October 1954 to September 1955

Date	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conduct- ance (microm- hos at 25°C)	рН	Bio- chemical oxygen demand ²	Dissəlved oxygen
Oct. 5, 1954	2,340	8,0	201	6, 9	1.3	8.1
Nov. 5	22,200	16	213	7.1	1.3	8.8
Dec. 2	15,400	5. 5	122	6.6	1.0	10.4
Jan. 4, 1955	19,800	6, 5	117	6,6	2.3	11, 1
Feb. 8		10	176	6.5	3.1	12.0
Mar. 3	29,700	5.0	125	6.3	2.1	10.4
Apr. 5	12,300	5,0	125	6.9	1.7	10.2
May 3		5.0	110	6.5	1.4	8, 5
June 2		9.0	185	6.8	.7	7.4
July 5		11	193	7.2	1.6	7.1
Aug. 1		14	237	6.5	6.1	4.9
Sept. 7	7,810	5.5	141	6.9	.4	6.5

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER AT LEHIGH AVENUE, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1955.
REMARKS.--Samples taken at center of stream approximately 3 feet from bottom.
Additional data are published in WSP 1262, Chemical characteristics of Delaware
River water, Trenton, N. J. to Marcus Hook, Pa.

Chemical analyses, in parts per million water year, October 1954 to September 1955

Date	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conduct- ance (microm- hos at 25°C)	рH	Bio- chemical oxygen demand ^a	Dissolved oxygen
Oct. 5, 1954	2,340	17	240	6.6	0,6	2.8
Nov. 5		18	256	6.8	2, 6	6.4
Dec. 2	15,400	6.5	115	7.2	.4	9.6
Jan. 4, 1955	19,800	8,5	128	6,2	3.2	10
Feb. 8		12	178	6,8	2.3	10.7
Mar. 3	29,700	7.0	142	6.2	3.0	9. 3
Apr. 5	12,300	6.0	130	7.3	3,6	10.6
May 3	10,900	6,0	121	6.5	2.3	9.4
June 2	6, 180	11	198	6,5	4.3	10
July 5		12	202	6.8	0.0	3.6
Aug. 1		26	300	6.3	3.9	2, 1
Sept. 7		7.5	164	6.7	2.5	3.8

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT PHILADELPHIA, PA.-BENJAMIN FRANKLIN BRIDGE (PHILADELPHIA-CAMDEN BRIDGE)

Chemical characteristics of Additional data published in WSP 1262, RECORDS AVAILABLE, --Chemical analyses: August 1949 to September 1955. REMARKS: --Samples taken at center of stream approximately 3 feet from bottom. Delaware River water, Trenton, N. J., to Marcus Rook, Pa.

solved oxygen 1.5 5.4 8.0 4.00 6.0 6.7 Bio-chemical oxygen demand a Color 4.0.8.2 평 Specific conductmhos at 25°C) (microance 339 276 123 123 123 123 129 210 210 321 168 carpon-Nonate 3 2 4 2 2222 22222 Hardness as CaCO, Calcium, mag-nestum 8234 8434 55 57 57 57 Chemical analyses, in parts per million, water year October 1954 to September 1955 Dissolved solids (residue on evap-oration at 180°C) 25228 118 128 191 132 Nitrate (NO₃) Fluo-ride (F) -- 27 -- --음 등 (1) 11 27 7.5 88 83 8.0 6.5 Sulfate (SO₄) 22 44 21 22 22 23 22223 32 41 Bicarbonate (HCO₃) 12 43 31 22222 3883 3.9 tas-KK) Sodium (Na) 2 4 4 8 9 Mag-ne-stum (Mg) 2.7.2 3.8.2 9.1.8 4.4.4.6 9.4.5.4 Cal-cium (Ca) 2222 2222 Fe) 0.08 0.22 0.08 31. 28. 03. 03. ខ្មន់ន្ Silica (SiO₂) 2 2 4 9 F 2 4 9 8 4 4 8 Discharge at Trenton (cfs) 6,180 2,870 1,970 7,810 22,340 15,400 19,800 12, 700 29, 700 12, 300 10, 900 Feb. 8 Mar. 3 Apr. 5 May 3 Date of collection Oct. 5, 1954 July 5 . Aug. 1 Sept. 7 June 2

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT WHARTON STREET, PHILADELPHIA, PA.

RECORDS AVAILABLE. --Chemical analyses: August 1949 to September 1955.
REMARKS. --Samples taken at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Tenton, N. J. to Marcus Hook, Pa.

Chemical analyses, in parts per million, water year October 1954 to September 1955

Date .	Discharge at Trenton (cfs)	Chloride (C1)	Specific conduct- ance (microm- hos at 25 C)	рН	Bio- chemical oxygen demand a	Dissolved oxygen
Oct. 4, 1954	2,340	36	332	6.3	0.8	1.3
Nov. 3	22,400	78	517	6.7	8.8	1.9
Dec. 1	15,400	8, 5	125	6.4	2, 1	8.6
Jan. 3, 1955		9.5	153	6, 4	2.4	10.0
Feb. 1		17	214	5.8	4.0	6.3
Mar. 2		9.0	201	6,3	3. 7	7.9
Apr. 4	12,300	7. 0	138	6.3	4.5	9.0
May 2		8.0	138	6,4	9.3	5.2
June 1		15	218	6.3	6.0	9.
July 6		17	255	6.6	.0	1.9
Aug. 2		61	462	6.3	5.4	3.3
Sept. 6		8, 5	170	6.5	.0	2. C

DELAWARE RIVER AT LEAGUE ISLAND, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1955.
REMARKS.--Samples taken at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa.

Chemical analyses, in parts per million, water year October 1954 to September 1955

Date	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conduct- ance (microm- hos at 25 C)	рН	Bio- chemical oxygen demand ^a	Dissolved oxygen
Oct. 4, 1954	2,340	63	452	6.4	0.0	1.3
Nov. 3		125	709	6.7	1.8	3.2
Dec. 1	15, 400	7.0	129	6.3	. 7	8.1
Jan. 3, 1955		10	152	6.2	3. 1	9.3
Feb. 1		18	226	5, 8	4, 2	6. 4
Mar. 2	29, 700	10	203	6.3	3.4	7. 5
Apr. 4	12,300	8.0	163	6, 2	2.1	7, 8
May 2	10,900	8.0	168	6. 2	5. 9	3.2
June 1	6, 180	17	252	6. 2	12	1.6
July 6	2,870	19	270	6.4	.3	2,6
Aug. 2	1,970	130	708	6.0	. 8	3.4
Sept. 6	7,810	8. 5	178	7.0	.0	1, 0

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT BERNE, PA.

LOCATION. --At gaging station at highway bridge at Berne, Berks County, 0.5 mile upstream from Mill Creek and 6.5 miles downstream from Little Schuylkill River.

DRAINAGE AREA. --355 square miles.

RECORDS AVAILABLE. --Chemical analyses: December 1947 to February 1953.

Water temperatures: February 1948 to April 1953.

Sediment records: October 1947 to September 1955.

EXTREMES, 1954-55. --Sediment concentrations: Maximum daily, 914 Aug. 18; minimum daily
1 ppm many days.

Sediment loads: Maximum daily, 43,200 tons Aug. 18; minimum daily, 0.2 ton Oct. 11-15.

EXTREMES, 1947-55. --Sediment concentrations: Maximum daily, 8,030 ppm Nov. 4, 1947;
minimum daily, 0 ppm many days during 1952 water year.

Sediment loads: Maximum daily, 90,180 tons Nov. 12, 1947; minimum daily, 0 tons on many days during 1952 water year.

REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

1382.

			nded sedim	ent, water ye			mber 1955		
		October			November			Dec∈ mber	
	Mean	Suspende	d sediment		Suspende	d sediment	Mean	Suspende	d sediment
Day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (prm)	Tons per day
1 2 3	92 92 103	1	0.3	140 149 406	3 5 31	1 2 s36	410 382 355	2	2
4 5	114 92 118) 		322 315 277	17 8 4	15 7 3	328 303 265	2	2
7 8 9	111 99 88 107	2	.6	248 214 198 193	4 5 8 8	3 3 4 4	242 220 271 300	4	3
11 12	95 79		.2	183 172	10 11	5 5 5	238 250	2	2
14	84 81 115	1	.2	172 172 154	10 3 2	.8	225 242 536	1	1
16 17 18	437 203 144	36	sa 48	162 154 162	3 4 3	1 2 1	455 382 717	4 26 54	5 27 s 120
19 20	122 136	2	.8	183 340	5 25	2 s 26	1,210 932	21 8	s 72 20
21 22 23 24	122 118 107	K		698 738 538	34 12 4	s 66 24 6	747 600 550	6 9 7	12 15 10
25	131 111 103	4	1	455 418 362	5 4 4	6 5 4	560 492 420	3	6 4
27	107 122 140	3	1	302 322 315 495	2 2 13	2 2 sa 20	380 376 432	2 29	2 34
30 31	198 188	8 5	4 3	470 	5 	6	1,770 1,530	59 15	s 269 62
Total.	3,959		72.5	9, 127		267.8	16, 165		692

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BERNE, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		January			February			March	
	Mean		d sediment	Mean	Suspende	d sediment	Mean	Suspende	d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	· charge	concen- tration	per	charge	concen-	per	charge	concen-	per
	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	1,200	10	32	230	(ррш/	b2	964	5	s 15
2	1,090	6	18	240		b3	1,160	2	6
3	943	5	13	205		b2	976	3	8
4 5	830 738	7 2	16 4	205		b2 b2	1,140 1,300	4 6	12 21
•	150	_	7	210		02	1,300		
6	729	2	4	400	9	s44	1,320	7	25
7 8	696 608	3 2	6 3	1,600	70	s 429 s 74	1,360	5 4	18 12
9	576	2	3	928 530	28 10	14	1,150 1,060	4	11
10	545	7	10	460	10	12	987	3	8
11	515	7	٠,,	500		. 50	970	3	_
12	460	3	10 4	576 656	32 24	s 56 42	870 783	3 1	7 2
13	455	4	5	500	15	20	712	ī	2
14	420	4	5	450	9	11	632	1	2
15	430	4	5	480	7	9	592	2	3
16	410	4	4	430	10	12	648	3	5
17	380	2	2	425	10	11	632	2	3
18 19	360 340	4	4 4	432 410	4 3	5 3	568 568	1 1	2 2
20	300	i	₹.8	425	2	2	538	2	3
	200								_
21	290 320	4	3 3	410 403	4 20	4 22	538 2,060	6 141	9 s 991
23	341	2	2	1,060	59	s 191	3,590	66	s 664
24	315	3	3	1,040	16	45	2,440	20	132
25	277	5	4	870	5	12	1,840	8	40
26	280	3	2	792	2	4	1,570	7	30
27	260	4	3	747	1	2	1,290	8	28
28 29	230 210		b2 b2	712	3	6	1,060 943	10 6	29 15
30	210		b2				830	4	9
31	220		b 2				756	3	6
Total.	14,978		180.8	15, 826		1,041	34,877		2,120
		April			May			June	
1	696)		592	2	3	332	1	
2	656 632	4	7	552		b3	257	} 3	2
3 4	576	K		522 500)	b3	240 240	ا ، ا	2
5	530	1	, ,	478			246	ן ו	
6	500	1	1	436	} 2	2	225	,	
7	500	· 1	1	429			215	} 3	2
8	464	1	1	443			225) }	
9	450	3	4	402	ì		484	24	s 33
10	422	3	3	376	} 2	2	350	15	14
11	396	2	2	382			356	14	s 14
12 13	450 560	4	5 6	356 338]		1,240 860	28 6	s 96 14
14	774	27	s70	33 8 33 8	ή Ι		696	6	14 11
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	1,490	22	89	314	ا ء ا	3	624	ן ט	
16.	· ·				3	3	1		0
16 17	1,160	5	16	284	3	3	530	6	9 10
17 18	1,160 976 870	5 2 2	16 5 5	284 279 262	} 3 } 2	3	530 471 457	6 8 8	10 10
17 18 19	1,160 976 870 801	5 2 2 3	16 5 5 6	284 279 262 240	} 2	1	530 471 457 422	6 8 8 8	10 10 9
17 18	1,160 976 870	5 2 2	16 5 5	284 279 262			530 471 457	6 8 8	10 10
17	1, 160 976 870 801 792	5 2 2 3 3	16 5 5 6 6	284 279 262 240 246	} 2 10 17	1 7 11	530 471 457 422 396	6 8 8 8 6	10 10 9 6
17	1,160 976 870 801 792 850 900	5 2 2 3 3 6	16 5 5 6 6	284 279 262 240 246 230 220	} 2 10 17 5	1 7 11 3	530 471 457 422 396 356 350	6 8 8 6 6	10 10 9 6
17	1,160 976 870 801 792 850 900 810	5 2 2 3 3 6 1 1	16 5 6 6 14 2	284 279 262 240 246 230 220 240	2 10 17 5 2	1 7 11 3 1	530 471 457 422 396 356 350 320	6 8 8 8 6	10 10 9 6
17	1,160 976 870 801 792 850 900	5 2 2 3 3 6	16 5 5 6 6	284 279 262 240 246 230 220	} 2 10 17 5	1 7 11 3	530 471 457 422 396 356 350	6 8 8 8 6 6 8	10 10 9 6 6 8 5
17	1,160 976 870 801 792 850 900 810 765 820	5 2 3 3 6 1 1 2	16 5 5 6 6 14 2 2 4	284 279 262 240 246 230 220 240 403 308	2 10 17 5 2 8 8	1 7 11 3 1 \$10 7	530 471 457 422 396 356 350 320 302 296	6 8 8 6 6	10 10 9 6
17	1, 160 976 870 801 792 850 900 810 765 820	5 2 3 3 6 1 1 2 1	16 5 5 6 6 14 2 2 4 2	284 279 262 240 246 230 220 240 403 308	2 10 17 5 2 8 8	1 7 11 3 1 s 10	530 471 457 422 396 356 350 320 302 296	6 8 8 8 6 6 8	10 10 9 6 6 8 5
17	1, 160 976 870 801 792 850 900 810 765 820 810 738 688	5 2 3 3 6 1 1 2	16 5 5 6 14 2 2 4 2 7 4 54	284 279 262 240 246 230 240 403 308 246 230 225	2 10 17 5 2 8 8 8	1 7 11 3 1 s 10 7 7 3 2 2 2	530 471 457 422 396 356 350 320 302 296 302 274	6 8 8 6 6 8 6	10 10 9 6 6 8 5
17	1, 160 976 870 801 792 850 900 810 765 820 810 738 688 648	5 2 3 3 6 1 1 2 1 3 2	16 5 5 6 14 2 2 2 4 2 7 4 4 5	284 279 262 240 246 230 220 240 403 308 246 230 225 257	2 10 17 5 2 8 8 8	1 7 11 3 1 s 10 7 7 3 2 2 7 7	530 471 457 422 396 356 350 320 296 302 274 257 240	6 8 8 8 6 6 8	10 10 9 6 6 8 5
17	1, 160 976 870 801 792 850 900 810 765 820 810 738 688	5 2 3 3 6 1 1 2 1	16 5 5 6 14 2 2 4 2 7 4 54	284 279 262 240 246 230 220 240 403 308 246 230 225 257	2 10 17 5 2 8 8 8	1 7 11 3 1 s 10 7 7 3 2 2 2	530 471 457 422 396 356 350 320 302 296 302 274	6 8 8 6 6 8 6	10 10 9 6 6 8 5
17	1, 160 976 870 801 792 850 900 810 765 820 810 738 688 648	5 2 2 3 3 6 1 1 2 1 3 2	16 5 5 6 14 2 2 2 4 2 7 4 4 5	284 279 262 240 246 230 220 240 403 308 246 230 225 257	2 10 17 5 2 8 8 8	1 7 11 3 1 1 s 10 7 2 2 2 7 s 10	530 471 457 422 396 356 350 320 296 302 274 257 240	6 8 8 6 6 8 6	10 10 9 6 6 8 5

s Computed by subdividing day.
b Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT BERNE, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		July		August			September		
		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1 2 3 4 5	240 252 215 199 184	2	1	106 98 98 98 102	2	0.5	781 658 580 584 521	10	18 3
6 7 8 9	194 310 189 170 189	1 	.5 b8 b1 b.5 b.5	102 110 130 98 95	1	.3	500 466 426 407 383	1	1
11 12 13 14	189 152 156 143 143	2	b1 .8	151 232 1,240 1,390 696	6 73 18 2	. 5 4 5 284 86 4	377 377 347 336 336	1	1
16 17 18 19 20	152 147 130 126	2	.7	464 391 8,250 16,000 4,640		1 1 s 43, 200 s 30, 800 s 1, 020	314 320 308 298 371	2	1 2
21	118 114 106 114 118	1	.3	2,630 2,100 2,320 1,500 1,180	12 5 20 2	s 68 28 s 148 8 6	298 262 272 522 550	1 1 1 	.8 .7 .7 b7
26 27 28 29 30	106 102 106 98 98 106	2	. 6	1,010 860 754 675 617 1,280	3 2 2 2 2 17	8 5 4 4 3 859	365 320 424 395 359	1 1 1	1 b4 1 1
Total .	4,788		27.5	49,417		75, 765.3	12,437		92.2

Total discharge for year (cfs-days) 205, 586
Total load for year (tons) 80, 935.5

s Computed by subdividing day.
b Computed from estimated concentration graph.

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.

LOCATION.—At Green Lane Avenue Bridge, 5 miles upstream from gaging station at Fairmount 'Dam, Philadelphia County.
DRAINAGE ARRA.—1,893 square miles (at Fairmount Dam).
RECORDS AVAILABLE.—Sediment records: November 1947 to September 1955.
EXTREMES, 1954-55.—Sediment concentrations: Maximum daily, 3,140 ppm Aug. 19; minimum daily, 2 ppm Dec. 28.
Sediment loads: Maximum daily, 650,000 tons Aug. 19; minimum daily, 4 tons Oct. 5.
EXTREMES, 1947-55.—Sediment concentrations: Maximum daily, 4,910 ppm Dec. 30, 1948; minimum daily, 1 ppm on several days.
Sediment loads: Maximum daily, 650,000 tons Aug. 19, 1955; minimum daily, 2 tons on several days.
REMARKS.—Records of specific conductance and pH of random samples available at the

REMARKS.--Records of specific conductance and pH of random samples available at the Harrisburg Subdistrict office. Records of discharge for water year October 1954 to September 1955 based on records for the Schuylkill River at Philadelphia (Fairmount Dam) given in WSP 1382, and include water diverted by the city of Philadelphia for municipal water supply.

Suspended sediment, water year October 1954 to September 1955

	<u> </u>	October		T	November			December	
			i sediment			d sediment		Suspende	sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per . day
1	523	12	17	918	10	25	2,150	16	93
2	575	17	26	993	15	s 49	1,790	10	48
3	527	9	13	4,840	105	s1,440	1,650	В	36
4	516	5	7	2,370	50	320	1,480	9	36
5	348	4	4	1,760	31	147	1,420	5	19
6	565	10	15	1,610	17	74	1,280	5	17
7	673	10	18	1,340	13	47	1,030	10	28
8	679	10	18	1,100	8	24	942	12	31
9,	572	9	14	995	4	11	1,050	11	31
10	533	7	10	898	4	10	2,000	22	s 131
11	523	6	8	830	3	7	1,870	7	35
12	524	6	8	785	4	8	1,440	12	47
13	535	7	10	740	6	12	1,220	14	46
14	495	6	8	752	5	10	1,250	12	40
15	515	9	13	730	6	12	3,230	31	s 277
16	733	12	24	719	4	8	2,750	23	171
17	952	18	46	716	4	8	2,200	20	119
18	908	14	34	686	5	9	2,670	27	s 230
19	688	18	33	737	6	12	4,810	53	s715
20	634	12	21	1,240	16	s 56	3,870	39	408
21	599	8	13	6,870	99	s 2, 430	2,920	23	181
22	598	. 9	15	6,620	107	s2,080	2,170	17	100
23	542	* 7	10	4,260	27	311	1,880	11	56
24	545	10	15	3,070	15	124	2,010	8	43
25	525	7	10	2,550	11	76	1,920	8	41
26	547	5	7	2,170	6	35	1,620	5	22
27	581	5	8	1,790	6	29	1,410	4	15
28	587	9	14	1,580	7	30	1,350	2	7
29	1,080	23	874	2,720	16	s 130	1,540	5	21
30	1,770	26	s 135	2,790	17	128	7,640	139	s 3, 920
31	1,180	11	35				7,470	160	s 3, 300
Total.	20,572		683	59, 179	,	7,662	72,032		10, 264

s Computed by subdividing day.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		January			Wahn			3/2	
				Ĺ	February		L	March	
	Mean		d sediment	Mean	Suspende	d sediment	Mean	Suspended	d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tone	dis-	Mean	T
	charge	concen-	per	charge	concen-	Tons per	charge	concen-	Tons per
	(cfs)	tration	day	(cfs)	tration		(cfs)	t∽ation	
	(615)	(ppm)	uay	(CIS)	(ppm)	day	(615)	(ppm)	day
1	5,150	48	667	707	9	17	3,090	10	83
2	4,470	25	302	770		a19	4,400	20	238
3	4,290	20	232.	715		a 14	3,640	22	216
4	3,420	19	175	592	l	a6	4,720	46	s 657
5	2,980	12	97	712	8	15	6,010	68	s1,100
•	-,555) °' '			۱ ۱	0,010	ا ۵۰	51,100
6	2,680	15	109	1,000	12	s 48	6, 110	114	s 2, 290
7	2,700	16	117	11,200	407	s 13,800	8,360	231	s 5, 580
8	2,460	ii	73	8,940	242	s6,160	5,150	46	640
0	2,090	10	56	3,960	85	s 957	4, 280		185
9 10	1,970	6	32	2,480	35	234	4,010	16 14	152
	2,010	٠ ١	"-	2, 200	33	202	4,010		100
11	1,860	7	35	2,450	30	198	3,640	111	108
12	1,680	5	23	3,680		a 1,000	3, 200		104
12	1,630	9	40	2,450		a 350	3,200	12 15	118
13	1,450	13	51				2,910		
14				1,890	20	102	2,560	11	76
15	1,440	10	39	1,940	20	105	2, 330	10	63
16	1,420	9	35	1,800	13	63	2,390	10	65
16	1,290	10	35	2,010	10	54	2,390	6	38
17	1,220	10	33	2,400	12	78		6	37
18	1,140	6	18	2,700	10	70 54	2, 280	5	30
19	1,060	7	20	2,010		48	2,230		29
20	1,000	(40	1,760	10	98	2, 180	5	29
91	968	9	ا ہے ا	1 000		ا م	9	ا ا	
21	914	6	24 15	1,670	8	36	2,780	10	75
22	914			1,660	10	45	7,300	333.	s11,300
23	1,010	7	19	3,020	50	s 610	16,300	832	s 39,000
24		-	16	5,600	110	s1,700	10,700	250	7,220
25	923	4	10	3,890	35	368	7,630	80	1,650
	883	[_ [0.000	[
26	856	5 6	12	2,990	25	202	6,660	60	1,080
27			14	2,670	12	87	6,120	50	826
28	813 715	5 5	11	2,490	10	67	4,720	25	319
29			10				4,080	20	220
30	681	4	7				3,670	20	198
31	660	7	12				3, 260	15	132
Total .	55,815		2,339	77,456		26, 437	149,080		73,829
Total .	55,815	April	2,339	77,456	L	26, 437]	
		April			May		149, 080	J ine	73,829
1	3,010	6	49	2,480	May 10	67	1,430	J ine 23	73, 829 89
1	3,010 2,770	6 5	49 37	2,480 2,310	May 10 10	67 62	1,430 1,160	J ine 23 17	73,829 89 53
1 2 3	3,010 2,770 2,600	6 5 10	49 37 70	2,480 2,310 2,130	May 10 10 10	67 62 58	1,430 1,160 1,010	J ine 23	73,829 89 53 44
1	3,010 2,770 2,600 2,460	6 5 10 8	49 37 70 53	2,480 2,310 2,130 2,070	May 10 10 10 9	67 62 58 50	1,430 1,160 1,010 932	J ine 23 17 16 13	73, 829 89 53 44 33
1 2 3	3,010 2,770 2,600	6 5 10	49 37 70	2,480 2,310 2,130	May 10 10 10	67 62 58	1,430 1,160 1,010	J me 23 17 16	73,829 89 53 44
1	3,010 2,770 2,600 2,460 2,330	6 5 10 8 8	49 37 70 53 50	2,480 2,310 2,130 2,070 1,970	May 10 10 10 9 6	67 62 58 50 32	1,430 1,160 1,010 932 876	J ine 23 17 16 13 13	73, 829 89 53 44 33 31
1	3,010 2,770 2,600 2,460 2,330 2,180	6 5 10 8 8	49 37 70 53 50	2,480 2,310 2,130 2,070 1,970	May 10 10 10 9 6	67 62 58 50 32	1,430 1,160 1,010 932 876 868	J ine 23 17 16 13 13	73,829 89 53 44 33 31 26
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160	6 5 10 8 8 9	49 37 70 53 50 53 82	2,480 2,310 2,130 2,070 1,970 1,840 1,600	May 10 10 10 9 6	67 62 58 50 32 65 60	1,430 1,160 1,010 932 876 868 828	J me 23 17 16 13 13 11 10	73,829 89 53 44 33 31 26 22
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030	6 5 10 8 8 9 14	49 37 70 53 50 53 82 82 82	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560	May 10 10 10 9 6 13 14	67 62 58 50 32 65 60 63	1,430 1,160 1,010 932 876 868 828 990	Jine 23 17 16 13 13 11 10 16	73,829 89 53 44 33 31 26 22 s 40
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820	6 5 10 8 8 8 9 14 15	49 37 70 53 50 53 82 82 49	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420	May 10 10 10 9 6 13 14 15 19	67 62 58 50 32 65 60 63 73	1,430 1,160 1,010 932 876 868 828 990 2,200	J me 23 17 16 13 13 11 10 16 29	73,829 89 53 44 33 31 26 22 840 8179
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030	6 5 10 8 8 9 14	49 37 70 53 50 53 82 82 82	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560	May 10 10 10 9 6 13 14	67 62 58 50 32 65 60 63	1,430 1,160 1,010 932 876 868 828 990	Jine 23 17 16 13 13 11 10 16	73,829 89 53 44 33 31 26 22 s 40
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740	6 5 10 8 8 8 9 14 15 10	49 37 70 53 50 53 82 82 49 61	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,400	May 10 10 10 9 6 13 14 15 19 12	67 62 58 50 32 65 60 63 73 45	1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220	J ine 23 17 16 13 13 11 10 16 29 28	73,829 89 53 44 33 31 26 22 840 8179
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740 1,660	6 5 10 8 8 8 9 14 15 10 13	49 37 70 53 50 53 82 82 49 61	2,480 2,310 2,130 2,130 2,070 1,970 1,840 1,560 1,420 1,400 1,320	May 10 10 10 9 6 13 14 15 19 12	67 62 58 50 32 65 60 63 73 45	1,430 1,160 1,010 1,010 932 876 868 828 990 2,200 2,220 1,660	J me 23 17 16 13 13 11 10 16 29 28	73,829 89 53 44 33 31 26 22 840 8179 168
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,740 1,660 2,020	6 5 10 8 8 9 14 15 10 13 15 21	49 37 70 53 50 53 82 82 49 61 67	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,420 1,320	May 10 10 10 9 6 13 14 15 19 12	67 62 58 50 32 65 60 63 73 45	1,430 1,160 1,101 932 876 868 828 990 2,200 2,200 1,660 3,180	J me 23 17 16 13 13 11 10 16 29 28 24 34	73,829 89 53 44 33 31 26 22 540 5179 168 108 5298
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740 1,660 2,020 2,840	6 5 10 8 8 9 14 15 10 13 15 21 20	49 37 70 53 50 53 82 82 49 61 67 115	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,400 1,320 1,290 1,250	May 10 10 10 10 9 6 13 14 15 19 12 14 10 10	67 62 58 50 32 65 60 63 73 45 50	1,430 1,160 1,160 1,010 932 876 868 828 990 2,200 2,220 1,660 3,180 4,320	J ine 23 17 16 13 13 13 11 10 16 29 28 24 34 57	73,829 89 53 44 33 31 26 22 s 40 s 179 168 108 s 298 673
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740 1,660 2,020 2,840 3,060	6 5 10 8 8 8 9 14 15 10 13 15 21 20	49 37 70 53 50 53 82 82 82 49 61 67 115 153	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,420 1,420 1,250 1,250 1,250	May 10 10 10 9 6 13 14 15 19 12 14 10 10 10	67 62 58 50 32 65 60 63 73 45 50 35 34	1,430 1,160 1,010 932 876 828 990 2,200 2,220 1,660 3,180 4,320 3,140	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49	73,829 89 53 44 33 31 26 22 840 8179 168 298 673 415
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740 1,660 2,020 2,840	6 5 10 8 8 9 14 15 10 13 15 21 20	49 37 70 53 50 53 82 82 49 61 67 115	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,400 1,320 1,290 1,250	May 10 10 10 10 9 6 13 14 15 19 12 14 10 10	67 62 58 50 32 65 60 63 73 45 50	1,430 1,160 1,160 1,010 932 876 868 828 990 2,200 2,220 1,660 3,180 4,320	J ine 23 17 16 13 13 13 11 10 16 29 28 24 34 57	73,829 89 53 44 33 31 26 22 s 40 s 179 168 108 s 298 673
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,740 1,660 2,020 2,840 3,060 5,230	6 5 10 8 8 8 9 14 15 10 13 15 21 20	49 37 70 53 50 53 82 82 49 61 67 115 153 107 8491	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,420 1,420 1,420 1,290 1,250 1,210 1,160	May 10 10 10 10 9 6 13 14 15 19 12 14 10 10 11 12 12	67 62 58 50 32 65 60 63 73 45 50 35 34 39	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35	73,829 89 53 44 33 31 26 22 s 40 s179 168 108 s 298 673 415 220
1	3,010 2,770 2,600 2,460 2,330 2,180 2,180 2,030 1,820 1,740 1,660 2,020 2,840 5,230 4,950	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35	49 37 70 53 50 53 82 49 61 115 153 107 8 491	2,480 2,310 2,130 2,070 1,970 1,800 1,560 1,420 1,400 1,200 1,250 1,210 1,160	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12	67 62 58 50 32 65 63 63 73 45 50 35 34 39	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35	73,829 89 89 53 44 33 31 26 22 s 40 s 179 168 108 s 298 673 415 220
1	3,010 2,700 2,600 2,460 2,380 2,180 2,160 2,030 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,990	6 5 10 8 8 9 14 15 10 13 15 21 20 13 35	49 37 70 53 50 53 50 61 67 115 153 107 8491	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,420 1,290 1,250 1,210 1,160	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 12 14	67 62 58 50 32 65 60 63 73 45 50 35 34 39 38	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000 1, 670	J ine 23 17 16 13 13 13 11 10 16 29 28 24 34 57 49 35 23 15	73,829 89 53 44 33 31 26 22 s 40 s179 168 108 s298 673 415 220 124 68
1	3,010 2,700 2,600 2,600 2,460 2,330 2,180 2,180 2,180 2,030 1,820 1,740 1,620 2,020 2,840 3,430 4,950 3,930 3,430	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 15 14 14	49 37 70 53 50 50 53 82 82 82 82 82 81 115 153 107 8491 a 360 215	2,480 2,310 2,130 2,130 2,070 1,970 1,600 1,560 1,420 1,400 1,290 1,290 1,250 1,210 1,160	May 10 10 10 9 6 13 14 15 19 12 14 10 10 10 10 12 12 12 14 13	67 62 58 50 32 65 65 60 63 73 45 50 35 34 39 38	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 330 2, 000 1, 670 1, 460	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10	73,829 89 53 44 33 31 26 22 540 \$179 168 108 \$298 673 415 220 124 68 39
1	3,010 2,700 2,600 2,600 2,460 2,330 2,180 2,180 2,030 1,820 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,430 3,120	6 5 10 8 8 9 14 15 10 13 15 20 13 35	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 8491 249 225 130 849	2,480 2,310 2,130 2,070 1,970 1,840 1,660 1,420 1,290 1,290 1,250 1,210 1,160 1,090 1,030 972 963	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 11 13 14	67 62 58 50 32 65 60 63 73 45 50 33 34 39 38 35 39	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000 1, 670 1, 460 1, 390	Jine 23 17 16 13 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10 13	73,829 89 53 44 33 31 26 22 840 8179 168 108 8298 673 415 220 124 68 39 49
1	3,010 2,700 2,600 2,600 2,460 2,330 2,180 2,180 2,180 2,030 1,820 1,740 1,620 2,020 2,840 3,430 4,950 3,930 3,430	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 15 14 14	49 37 70 53 50 50 53 82 82 82 82 82 81 115 153 107 8491 a 360 215	2,480 2,310 2,130 2,130 2,070 1,970 1,600 1,560 1,420 1,400 1,290 1,290 1,250 1,210 1,160	May 10 10 10 9 6 13 14 15 19 12 14 10 10 10 10 12 12 12 14 13	67 62 58 50 32 65 65 60 63 73 45 50 35 34 39 38	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 330 2, 000 1, 670 1, 460	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10	73,829 89 53 44 33 31 26 22 540 \$179 168 108 \$298 673 415 220 124 68 39
1	3,010 2,700 2,600 2,600 2,460 2,330 1,820 1,740 1,660 2,030 1,740 1,660 2,040 3,060 5,230 4,950 3,990 3,430 3,120 3,320	6 5 5 10 8 8 8 8 9 14 15 10 13 15 21 1 200 13 3 5 15 21 1 10 12 10 12	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 8491 215 130 484 108	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,400 1,250 1,210 1,160 1,160 1,090 1,090 1,090 972 963 909	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 12 14 13 14 10	67 62 58 50 32 65 60 63 73 45 50 35 34 39 38	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000 1, 670 1, 460 1, 390 1, 820	Jine 23 17 16 13 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10 13 19	73,829 89 53 44 33 31 26 22 540 8179 168 108 673 415 220 124 68 39 49 898
1	3,010 2,770 2,600 2,460 2,330 2,180 2,160 2,030 1,820 1,740 1,660 2,020 2,840 2,940 3,660 5,230 4,950 3,430 3,120 3,320	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35	49 37 70 53 50 53 50 53 82 82 82 49 61 67 115 153 107 8 491 215 130 84 140	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,420 1,290 1,250 1,210 1,160 1,090 1,030 972 963 909	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 10 10 10 10 11 11 11 11 11 10 10 10 10	67 62 58 50 32 65 60 63 73 45 50 35 34 39 38 39 34 36 36 36 32	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 030 1, 670 1, 460 1, 390 1, 820 1, 810	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10 13 19	73,829 89 53 44 33 31 26 22 840 8179 168 108 8298 673 415 220 124 68 39 49 49 898
1	3,010 2,700 2,600 2,460 2,300 2,180 2,180 2,030 1,820 1,740 1,660 2,030 1,740 1,660 2,030 1,740 3,060 3,900 3,120 3,120 3,320 3,450 3,450 3,450 3,770	6 5 5 10 8 8 8 8 9 14 15 10 13 13 15 21 20 13 35 14 10 12 15 20 15	49 37 70 53 53 50 53 82 82 49 61 67 115 153 107 1849 108	2,480 2,310 2,130 2,070 1,970 1,840 1,600 1,560 1,420 1,200 1,250 1,210 1,160 1,090 1,030 906 906 911	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 13 14 10 10 9	67 62 58 50 32 65 63 63 73 45 50 34 39 39 34 39 34 32 32 34 32 32 34 32 32 32 32 32 32 32 32 32 32 32 32 32	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 330 2, 000 1, 670 1, 460 1, 390 1, 820 1, 810 1, 330	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 18	73,829 89 89 53 44 33 31 26 22 540 5179 168 108 673 415 220 124 68 39 49 898 88
1	3,010 2,770 2,600 2,460 2,380 2,180 2,180 2,030 1,820 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,120 3,120 3,320 3,450 3,770 3,860	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 15 21 12 20 14 10 12 15 20 20 20 20	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 849 215 130 84 108	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,320 1,250 1,210 1,160 1,090 1,030 972 963 909	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 10 10 9 9	67 62 58 50 32 65 60 63 73 45 50 33 43 39 38 39 34 39 34 32 32 32 32 32 32 32 32 32 32 32 32 32	1,430 1,430 1,160 1,010 932 976 868 828 990 2,200 2,220 1,660 3,180 4,320 3,140 2,330 2,000 1,670 1,460 1,390 1,810 1,330 1,220	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13	73,829 89 53 44 33 31 26 22 540 5179 168 108 5298 673 415 220 124 68 39 49 598
1	3,010 2,70 2,600 2,600 2,460 2,330 2,180 2,180 2,030 1,820 1,740 1,660 2,020 2,840 3,060 3,950 3,930 3,120 3,3430 3,120 3,770 3,860 3,770 3,870 3,970 3,00 3,00 3,00 3,00 3,00 3,00 3,00 3,	6 5 10 8 8 8 8 9 14 15 10 13 15 12 1 12 10 12 1 15 12 10 12 1 15 12 10 12 1 15 12 10 19 19	49 37 70 53 55 55 55 82 82 82 49 61 67 115 153 107 84 116 215 130 84 108 140 204 208	2,480 2,310 2,130 2,130 2,070 1,970 1,800 1,560 1,420 1,400 1,200 1,250 1,210 1,160 1,030	May 10 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 10 10 10 10 11 11 11 11 11 11 11 11 11	67 62 58 50 32 65 65 60 63 73 45 50 35 34 39 38 35 39 34 36 25	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 330 2, 000 1, 460 1, 390 1, 460 1, 390 1, 820 1, 810 1, 330 1, 220 1, 310	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 18 15 13 14	73,829 89 89 89 89 89 81 26 22 840 8179 168 108 8298 673 415 220 124 68 39 49 898 88 84 43
1	3,010 2,770 2,600 2,460 2,380 2,180 2,180 2,030 1,820 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,120 3,120 3,320 3,450 3,770 3,860	6 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 15 21 12 20 14 10 12 15 20 20 20 20	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 849 215 130 84 108	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,320 1,250 1,210 1,160 1,090 1,030 972 963 909	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 10 10 9 9	67 62 58 50 32 65 60 63 73 45 50 33 43 39 38 39 34 39 34 32 32 32 32 32 32 32 32 32 32 32 32 32	1,430 1,430 1,160 1,010 932 976 868 828 990 2,200 2,220 1,660 3,180 4,320 3,140 2,330 2,000 1,670 1,460 1,390 1,810 1,330 1,220	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13	73,829 89 53 44 33 31 26 22 540 5179 168 108 5298 673 415 220 124 68 39 49 598
1	3,010 2,70 2,600 2,600 2,460 2,330 2,180 2,180 2,030 1,820 1,740 1,620 2,020 2,840 3,020 3,930 4,950 3,930 3,120 3,120 3,770 3,860 3,770 3,860 3,150 2,930	6 5 10 8 8 8 8 9 14 15 100 13 15 12 1 12 10 12 12 12 12 12 12 12 12 12 12 12 12 12	49 37 70 53 50 50 53 82 82 82 82 82 82 81 61 67 115 153 107 8491 a 360 215 130 84 100 204 204 208 2142	2,480 2,310 2,130 2,130 2,070 1,970 1,600 1,560 1,420 1,400 1,250 1,250 1,210 1,160 1,030	May 10 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 10 10 10 10 11 11 11 11 11 11 11 11 11	67 62 58 50 32 65 65 60 63 73 45 50 35 34 39 38 35 39 34 36 25 24 22 23 35 42	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 330 2, 000 1, 460 1, 390 1, 460 1, 390 1, 820 1, 810 1, 330 1, 220 1, 310 1, 190	J ine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 19 18	73,829 89 89 53 44 33 31 26 22 540 5179 168 108 5298 673 415 220 124 68 39 49 898 88 54 43 50 55
1	3, 010 2, 770 2, 600 2, 600 2, 460 2, 330 1, 820 1, 740 1, 660 2, 020 2, 340 3, 060 5, 230 3, 120 3, 120 3, 320 3, 450 3, 150 3, 160 3, 180	6 5 10 8 8 8 8 9 14 15 10 13 15 12 1 12 10 12 1 15 12 10 12 1 15 12 10 12 1 15 12 10 19 19	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 8491 108 140 208 162 142	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,400 1,290 1,250 1,210 1,160 1,090 1,090 972 963 909 906 911 937 1,010 1,190 1,250	May 10 10 10 9 6 13 14 15 19 12 14 10 10 10 10 10 10 10 11 12 12 14 13 14 10 10 10 10 10 10 10 10 10 10 10 10 10	67 62 58 50 32 65 60 63 73 45 50 35 34 39 38 35 39 34 25 24 22 23 35 42	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000 1, 670 1, 460 1, 390 1, 810 1, 330 1, 220 1, 310 1, 190 1, 100	Jine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 23 15 10 13 19 18 18 18 17	73,829 89 89 53 44 33 31 26 22 840 8179 168 108 8298 673 415 220 124 68 39 49 898 88 84 43 50 55
1	3,010 2,700 2,600 2,460 2,380 2,180 2,180 2,030 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,450 3,120 3,760	6 5 5 10 0 8 8 8 9 14 15 15 10 13 15 21 20 14 11 12 15 20 19 18 18 17 11	49 37 70 53 50 50 53 82 82 82 82 82 82 82 82 82 82 82 82 82	2,480 2,310 2,130 2,170 1,970 1,840 1,600 1,560 1,420 1,420 1,290 1,250 1,210 1,160 1,030	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 10 10 10 19 9 13 14 10 10 15 16	67 62 58 50 32 65 60 63 73 45 50 35 34 39 38 35 39 34 36 25	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 300 1, 670 1, 460 1, 390 1, 820 1, 810 1, 330 1, 120 1, 310 1, 190 1, 100 1, 100 1, 100	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 10 13 19 18 15 13 14 17	73,829 89 53 44 33 31 26 22 840 8179 168 8298 673 415 220 124 68 39 49 898 84 54 43 55 55 53 43
1	3,010 2,700 2,600 2,460 2,300 1,820 1,820 1,740 1,660 2,030 1,740 1,660 2,030 1,740 1,660 3,060 3,990 3,990 3,120 3,320 3,120 3,770 3,860 3,150 3,180 3,250 3,180 3,250	6 5 10 8 8 8 8 9 14 15 10 13 13 15 12 12 12 15 12 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 12 12 12 12 12 12 12 12 12 12 12	49 37 70 53 53 52 82 49 61 67 115 153 107 849 108 140 204 208 162 208 142 146 97 61	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,400 1,290 1,250 1,210 1,160 1,030 972 963 909 906 911 937 1,010 1,190 1,250 1,190 1,250 981 981	May 10 10 10 9 6 13 14 15 19 12 14 10 10 10 10 10 12 12 14 13 14 10 10 10 10 10 10 10 10 10 10 10 10 10	67 62 58 50 32 65 60 63 73 45 50 34 39 34 39 34 22 23 35 42 42	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 000 1, 670 1, 460 1, 390 1, 820 1, 310 1, 190 1, 100 1, 060 1, 040	Jine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 14 17 18 15 14 17	73,829 89 89 53 44 33 31 26 22 540 8179 168 108 673 415 220 124 68 39 49 898 88 84 43 50 55 53 43 39
1	3,010 2,770 2,600 2,460 2,300 1,820 1,820 1,740 1,660 2,030 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,120 3,120 3,120 3,760 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 2,930 3,150 3,150 2,930 3,150	6 5 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 5 20 14 10 12 15 20 20 19 18 8 9	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 849 1108 140 208 140 208 162 142 146 97 61 66	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,320 1,250 1,210 1,160 1,030 972 963 909 906 911 937 1,010 1,190 1,250 1,210 2,250 2,210 2,210 2,250 2,210 2,210 2,250 2,210 2,210 2,250 2,210 2,210 2,250 2,210 2,250 2,210 2,250	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 15 15 16 18 17	67 62 58 50 32 65 65 60 63 73 45 50 33 34 39 38 35 32 42 22 23 35 42 51 42 43 84 84	149,080 1,430 1,160 1,010 9322 876 868 828 990 2,200 2,220 1,660 3,180 4,320 2,330 2,000 1,670 1,460 1,390 1,810 1,330 1,120 1,110 1,190 1,100 1,060 1,040	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 14 17 18 18 15 14 17	73,829 89 53 44 33 31 26 22 840 8179 168 8298 673 415 220 124 68 39 49 49 88 54 55 55 53 43 39 35
1	3,010 2,700 2,600 2,460 2,300 1,820 1,820 1,740 1,660 2,030 1,740 1,660 2,030 1,740 1,660 3,060 3,990 3,990 3,120 3,320 3,120 3,770 3,860 3,150 3,180 3,250 3,180 3,250	6 5 10 8 8 8 8 9 14 15 10 13 13 15 12 12 12 15 12 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 15 12 12 12 12 12 12 12 12 12 12 12 12 12	49 37 70 53 53 52 82 49 61 67 115 153 107 849 108 140 204 208 162 208 142 146 97 61	2,480 2,310 2,130 2,170 1,970 1,970 1,840 1,560 1,420 1,400 1,200 1,250 1,160 1,030 1,160 1,030 906 911 937 1,010 1,190 1,250 1,190 1,250 1,140 1,190 1,190 1,190	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 10 9 9 13 13 13 15 16 18 17 20	67 62 58 50 32 65 60 63 73 45 50 34 39 34 39 34 22 23 35 42 42 43 846	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 2, 000 1, 670 1, 460 1, 390 1, 820 1, 310 1, 190 1, 100 1, 060 1, 040	Jine 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 14 17 18 15 14 17	73,829 89 89 53 44 33 31 26 22 540 8179 168 108 673 415 220 124 68 39 49 898 88 84 43 50 55 53 43 39
1	3, 010 2, 770 2, 600 2, 460 2, 300 1, 820 1, 820 1, 740 1, 660 2, 020 2, 240 3, 060 5, 230 3, 120 3,	6 5 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 5 20 14 10 12 15 20 20 19 18 8 9	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 849 108 140 204 142 208 162 144 97 61 66 64	2,480 2,310 2,130 2,070 1,970 1,970 1,840 1,600 1,560 1,420 1,200 1,250 1,210 1,160 1,090 1,090 1,090 972 963 909 906 911 937 1,010 1,190 1,250 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,190 1,250	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 15 15 16 18 17	67 62 58 50 32 65 60 63 73 45 50 35 34 39 34 25 24 22 23 35 42 42 23 35 42 42 42 42 42 42 43 44 66 66 66 67 68 68 68 68 68 68 68 68 68 68 68 68 68	149, 080 1, 430 1, 160 1, 010 932 876 868 828 990 2, 200 2, 220 1, 660 3, 180 4, 320 3, 140 2, 330 2, 000 1, 460 1, 390 1, 220 1, 310 1, 190 1, 100 1, 040 1, 040 938 864	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 14 17 18 18 15 14 17	73,829 89 53 44 33 31 26 22 840 8179 168 8298 673 415 220 124 839 49 898 88 54 43 50 55 53 43 399 35 26
1	3,010 2,700 2,600 2,600 2,460 2,330 1,820 1,740 1,660 2,030 1,740 1,660 2,020 2,840 3,060 5,230 4,950 3,120	6 5 5 10 8 8 8 9 14 15 10 13 15 21 20 13 35 5 20 14 10 12 15 20 20 19 18 8 9	49 37 70 53 50 53 50 82 82 49 61 87 115 153 107 8491 215 130 84 108 140 204 208 162 142 146 97 61 66 64 	2,480 2,310 2,130 2,170 1,970 1,970 1,840 1,560 1,420 1,400 1,200 1,250 1,160 1,030 1,160 1,030 906 911 937 1,010 1,190 1,250 1,190 1,250 1,140 1,190 1,190 1,190	May 10 10 10 9 6 13 14 15 19 12 14 10 10 12 12 14 13 14 10 9 9 13 13 13 15 16 18 17 20	67 62 58 50 32 65 60 63 73 45 50 34 39 34 39 34 22 23 35 42 42 43 846	149,080 1,430 1,160 1,010 9322 876 868 828 990 2,200 2,220 1,660 3,180 4,320 2,330 2,000 1,670 1,460 1,390 1,810 1,330 1,120 1,110 1,190 1,100 1,060 1,040	J me 23 17 16 13 13 11 10 16 29 28 24 34 57 49 35 15 10 13 19 18 15 13 14 17 18 18 15 14 17	73,829 89 53 44 33 31 26 22 840 8179 168 8298 673 415 220 124 68 39 49 49 88 54 55 55 53 43 39 35

s Computed by subdividing day.
a Computed from estimated concentration graph.

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		July)	August		Γ	September	
	Mean	Suspende	1 sediment		Suspende	d sediment		Suspended	sediment
Day	dis-	Mean	Tons	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons
-	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tration	day
		(ppm)	uay	(615)	(ppm)	uay	(615)	(ppm)	uay
1	857	13	30	478	14	18	3,470	16	150
2	813	10	22	476	20	26	2,900	17	133
3	823	7	16	482	23	30	2,330	10	63
4	795	6	13	477	26	33	2,020	9	49
5	747	10	20	494	25	33	1,850	6	30
6	893	19	s 58	485	7	9	1,760	6	29
7	813	33	72	449	16	19	1,670	5	23
8	809	28	61	947	31	79	1,550	5 1	21
9	788	13	28	590	13	21	1,460	1 6	24
10	735	8	16	551	10	15	1,430	5	19
	787	15	32	510	15	21	1,370	6	22
11	799	19	41	3,220	180	s1,990	1,380	5	19
13	705	16	30	29,400	1.050	s93,500	1.300	1 41	14
14	652	20	35	14,400	385	s16,000	1,280	5	17
15	636	16	27	8,010	200	4,330	1,240	4	13
10				0,010	200	1,350	1,270]]	13
16	620	19	32	3,820	100	1,030	1,240	5	17
17	606 592	15 20	25	2,930	50	396	1,210	4	13
18	565	18	32	8,400	452	s33,400	1,180	6	19
19	552	21	27 31	65,500	3,140	sa 650, 000	1,190	5	16
20	332	41	31	27,300	502	s 46, 600	1,240	9	30
21	540	23	34	10,800	150	4,370	1,240	5	17
22	515	19	26	10,000	115	3,100	1,220	6	20
23	512	15	21	9,000	68	1,650	1,200	6	19
24	525	25	35	6,520	38	669	1,380	9	34
25	556	25	38	4,820	20	260	2,300	10	62
26	553	20	30	3.870	12	125	2,220	8	48
27	520	16	22	3,260	6	53	1,480	9	36
28	520	27	38	2,900	7	55	1,570	ا ۋا	38
29	481	13	17	2,570	10	69	1,810	101	49
30	479	20	26	2,340	1 9	57	1,670	10	45
31	459	1 17	21	2,270	8	49	1,070	1 1	
Total.	20, 247		956	227, 269		858,007	49, 160		1,089
	ischarge fo	r vear (ofe-	dave)					L	908, 323
Total le	oad for year	(tons)							989,665
g Comi	outed by out	dividing da							333,000
		estimated co		aronh					
· Comp	patou 11 OIII	Communica C	miceniu audi	. g. apıı.					

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Metbods of analysis: B. bottom withdrawal tube. D. decontation: P. pipette; S. sleve; N. in native water; W. in dietilod water - homically disnessed. M. machanically disnessed.

		Methods of analysis	•	BWCM BWCM BWCM
			1.000	
			0.500	
			0.500	66
		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.500 0.500 1.000	100
		ize, in mi	0.125	100 98 94
, 200		dicated s	0.062	98 90
atta diope	ediment	ier than tr	0. 031	68 74 79
THE CHAIRC	Suspended sediment	ercent fir	0.016	48 46 61
ock, m,	Susj	1	0.008	39 28 45
arry mapper			0.004	17 18 24
, cnemic			0.002	
w, in distilled water, c, chemically dispersed, m, mechanically dispersed		Concentration of suspension	analyzed (ppm)	2,360 2,020 507
, TE 6		Concentration	of sample (ppm)	278 538 38
	Water	tem-	ature (°F)	
		Discharge (cfs)		1,800 13,900 5,140
		Time		2:15 p. m. 2:30 p. m. 8:00 a. m.
	i	Date of collection		Dec. 30, 1954 Feb. 7, 1955 Mar. 6

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BELMONT FILTER PLANT, PHILADELPHIA, PA

Filter Plant, Philadelphia, Philadelphia County, 1.6 miles upstream from gaging station at Fairmount Dam in Philadelphia.

PRAINAGE AREA -1.80 square miles.

RECORDS AREA -1.80 square miles.

RETREMES. 1948-55.—Dissolved Solids: Maximum, 387 ppm Aug. 1-10, and Man. 21-31.

Radness: Maximum, 201 ppm Oct 1-10; minimum, 347 ppm Mar. 1-10, and man. 21-31.

Specific conductance: Maximum, 887 piny 20, Aug. 7, minimum, 347 ppm Pec. 11-20, 1953; minimum, 347 ppm Reb. 1-10 and Feb. 21-28, 1951.

RETREMES. 1945-55.—Dissolved Solids: Maximum, 362 ppm Oct 22-30, 1953; minimum daily, 154 micromhos Apr. 29, 1952.

Radness: Maximum adily, 588 micromos Oct 7, 1951; minimum daily, 154 micromhos Apr. 29, 1952.

Specific conductance: Maximum adily, 588 micromos Oct 7, 1955; minimum faily point on many days during winter months.

Specific conductance: Maximum was 1000 and 1000 an

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	Color	8 2 2 0 4 2	- ୧୯୯୩ ୧୯୩୩		1.12
	Hd	466411	0.7.7.7. 1.7.8 1.7.6	5.5.5.5. 8.4.5.5 8.0	2.7. 4.7. 8.7.
	Specific conduct- ance (micro- mhos at 25°C)	507 486 482 340 410	315 307 290 255 323 379	364 274 286 239 271 235	291 291 267
	Total acid- ity as H ₂ SO ₄				
	ess 30, Non- carbon- ate	134 121 126 92 106	73 67 70 59 75	88 59 55 51	57
	Hardness as CaCO ₃ Calcium, No mage car nesium a	201 188 186 133 152	113 105 106 91 116 145	136 100 105 89 89 89	113 110 98
r 1955	Dissolved solids (residue on evap- oration at 180°C)	323 328 304 208 262 181	204 192 181 165 224 242	259 179 180 164 164	191 186 174
eptembe	Ni- trate (NO ₃)	6.7 7.7 7.8 9.6 12	13 13 12 14	12 10 10 10 10	8.4 6.1 1.1
954 to S	Fluo- ride (F)	8.4.4.8.4	ननननन	******	44.4
ctober 1	Chlo- ride (Cl)	25 24 22 16 16	12 12 10 10 14 16	16 10 11 10 12 9,0	9.99
year O	Sul- fate (SO ₄)	121 107 110 77 108 108	74 71 73 64 92	46 63 47 65 65 65 65	78
n, water	Bicar- bonate (HCO ₃)	82 82 50 50 45	8444 800 000 000	58 50 45 41 51	52
millio	Po- tas- sium (K)	115 12 8.4 12	4 4 4 4 8 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8	20 113 13 13	15 16
parts pe	So- dium (Na)	777 877		84444	
Chemical analyses, in parts per million, water year October 1954 to September 1955	Mag- ne- sium (Mg)	21 19 18 13 15 9.8	9.2 9.3 9.3 10 14	13 9.99.95 7.00.32	1110
al analy	Cal- cium (Ca)	8444 88 8 7 8 8 8 7 8 8 8 7 8 8 8 8 8 8	22 27 23 30 35	22 22 25 25 25	23 23 23
Chemic	Man- ga- nese (Mn)				
	Lon (Fe)	0.06 114 0.08 0.08	01.08	.10	2,2,8
	Alum- inum (Al)				
	Silica (SiO ₂)	4.7.9.81 13.9.2 13.9.2	11 11 12 12	12 11 14 16 16	11 10 9.2
	Tem- pera- ture (°F)				
	Mean discharge (cfs)	268 350 489 1,380 498 3,150	1,170 2,230 2,600 2,920 1,120 553	2,800 1,930 2,700 4,680 6,360	2,030 3,080 2,900
	Date of collection	Oct. 1-10, 1954 Oct. 11-20 Oct. 21-31 Nov. 1-10 Nov. 21-30	Dec. 1-10. Dec. 11-20 Dec. 21-31 Jan. 1-10, 1955. Jan. 11-20 Jan. 21-31	Feb. 1-10. Feb. 11-20 Feb. 21-28 Mar. 1-10 Mar. 21-31	Apr. 1-10 Apr. 11-20 Apr. 21-30

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BELMONT FILTER PLANT, PHILADELPHIA, PA.--Continued

	Color	2 1 2	N 00 00 00 00	448188	60
	Hd	7.5	2.7.7.7. 8.8.4.0.4.	3 4 4 2 1 . 5	-
	Specific conduct- ance (micro- mhos at 25°C)	308 361 406	386 328 344 445 475	525 387 280 354 422 450	355
	Total acid- ity as H ₂ SO ₄		N. d.o.		
	CO, Non- carbon-	63 83	87 81 73 100 99	103 90 77 98 112 123	84
	Hardness as CaCOs Calcium, No mag- car	113 140 147	151 128 131 145 170 176	185 139 110 142 165 178	133
in parts per million, water year October 1954 to September 1955 Continued	Dissolved solids (residue on evaporation at 180°C)	199 241 271	266 219 236 262 312 321	335 256 204 231 271 296	234
ber 1955	Ni- trate (NO ₃)	5.8 6.1 6.3	6.0.0.0.4 6.0.0.14 7.0.0.14	0.7.7.0.0	8.5
Septem	Fluo- ride (F)	1.0.	ដល់ដល់ដល់ដ	ឆ់ស់ស់ស់ស	0.1
· 1954 to	Chlo- ride (Cl)	12 12 15	16 11 15 17 18 22	27 16 9.5 9.5 13	14
October	Sui- fate (SO ₄)	80 108	102 89 85 103 126 126	143 111 105 120 140	85
er year	Bicar- bonate (HCO ₃)	92 24	78 71 77 94	860 4 4 5 6 8 8 4 4 6 9 8 4 6 9 8 9 4 6 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	9
on, wat	Po- tas- sium (K)		8160687	2,2,2,5 8 6 5	
er milli	So- dium (Na)	18	22 15 20 25 28 31	9.9 14 14	18
n parts p	Mag- ne- sium (Mg)	11 21 21	16 13 13 14 17	20 15 11 14 17	13
lyses, i	Cal- cum (Ca)	27 33 36	34 30 31 40 41	41 31 26 34 38 40	32
Chemical analyses,	Man- ga- nese (Mn)				
Chem	Iron (Fe)	0.0 8.0.2	. 08 . 14 . 03 . 01 . 10	. 02 . 01 . 02 . 18 . 13	0.08
	Alum- inum (A1)				
	Silica (SiO ₂)	6.5 10 9.0	10 11 14 12 11 8.5	4. 2 9. 1 11 8. 3 9. 3	11
	Tem- pera- ture (°F)				
	Mean T discharge t (cfs) (1,610 827 767	962 2,010 866 475 311	203 16,000 4,990 1,890 1,020 1,620	2,184
	Date of collection	May 1-10, 1955 May 11-20 May 21-31	June 1-10 June 11-20 June 21-30 July 1-10 July 11-20	Aug. 1-10. Aug. 11-20 Aug. 21-31 Sept. 11-20 Sept. 21-30	Average

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT BELMONT FILTER PLANT, PHILADELPHIA, PA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	55	44	43	35	44	44	59	75		84	74
2	74	53	43	42	35	45	47	61	74		82	79
3	75	51	41	42	34	50	50	63	73		83	78
4	76	48	41	41	34	46	50	64	73		84	76
5	75	45	42	41	34	46	56	66	72		85	73
!	75	45	41		34	46	56	69	72		86	76
6	72	46	38	41	34		50 57	70	74		88	77
7				41		42					85	
8		45	36	40	34	40	55	64	75			75
9		45	37	41	35	41	55	69	71		83	75
10	68	43	36	41	35	41	56	67	69		83	75
11	69	44	37	38	37	44	54	66	69		83	78
12	69	44	36	38	38	50	57	66	68		80	75
13	69	47	36		37	50	57	67	68		80	75
14	67	47	36		36	50		68	69		71	74
15	67	47	39	37	36	50	60	68	68		74	73
16	69	48	41	37	35	52		69	69		78	74
17	69	48	40	37	36	52 52	61	~-	71	83	77	76
18	69	48		37	38	51	60		71	84	79	76
19	66	50		36	38	49	61		71	85	79	76
	65	52		35	40			l .	77	88		77
20	69	52		35	40	41	62		77	80		- 11
21	61		44	35	41	40	61		78	87	78	77
22	59	52	39	36	41	48	61		78	87	77	76
23	58	49	37	35	44	45			78	86	79	78
24	58	51	40	36	42	45	64	75	81	87	77	74
25	60	48	38	37	42	45	63	79		86	77	74
26	60	47	35	37	42	44	61	79	79	87	75	71
27	60	48	36	38	42	43	53	78	80	86	73	71
28	60	45	37	36	42	42	57	77	78	86	75	71
29	60	45	40	36		40	57	74	78	86	77	70
	59	45	42	36		41	57	75	80	83	77	69
30 31	57		42	35		42		76		82	80	
Aver-	66	48	39	38	38	45	57		74		87	75

4. 6. 6. 4. 6.

Color

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DELAWARE RIVER BASIN -- Continued

SCHUYLKILL RIVER AT PASSYUNK AVENUE, PHILADELPHIA, PA.

LOCATION.---Continuous sample collected from intake pipe at Atlantic Refining Company, Passyunk Avenue, Philadelphia, Pa.

DMAINAGE AREA.--1,893 square miles (at Fairmount Dam).

RECORDS (MAILEAE. "-Chemical malayses: October 1953 to September 1955.

RECORDS (MAILEAE. "-Chemical malayses: October 1953 to September 1955.

Specific conductance: Maximum, 204 ppm Oct. 10-20, minimum, 88 ppm Mar. 20-31, Apr. 1.

Specific conductance: Maximum, 90°F July 24, 25; minimum, 35°F Peb. 9.

KWIREMES, 1953-55.—Hardness: Maximum, 224 ppm Oct. 11-20, 1955; minimum, 85 ppm Mar. 1-0, 1954.

Specific conductance: Maximum daily, 795 micromhos Oct. 20, 1955; minimum, 81 ppm Mar. 1-0, 1953.

Water temperatures: Maximum daily, 795 micromhos Oct. 20, 1955; minimum, 81 ppm Mar. 1-0, 1953.

Water temperatures: Maximum daily, 24, 25, 1955; minimum, 35°F Pan. 24, 1954, Peb. 9, 1953.

p.	~~~~~		L L L L L	
Specific conduct- ance (micro- mhos at 25°C)	673 700 654 434 498 342	379 366 350 303 461	552 336 296 259	351 326 293 337 418
CO ₃ CO ₃ Non- carbon- ate	83 105 110 90 102 102	44 44 45 45 83	26 44 72 45 54	69 48 59 43 47 47 40
Harda as Ca Calcium, mag- nesium	186 204 200 149 156 128	120 120 115 99 118	155 102 106 95 89	118 108 101 113 138
Dissolved solids (residue on evaporation at 180°C)	397 429 426 277 315	248 245 242 242 194 247	361 237 234 196 174	233 233 233 266 266
Nitrate (NO ₃)	24 21 21 11 15 8.9	13 13 12 19 19 19 19 19 19 19 19 19 19 19 19 19	51 11 9.7 4.8	21 8.9 8.4 8.7 7.7
Fluoride (F)	o 4. wi wi wi wi	બં બં બં બં બં અં	44444	ज ंज जं च चंच
Chloride (C1)	52 52 52 54 54 61	25 25 11 11 28 28	38 18 10 10	16 13 12 22 22 27
Sulfate (SO ₄)	113 141 143 109 122 85	88 90 75 94	142 78 83 76 67	88 75 75 105 114
Bicar- bonate (HCO ₃)	122 122 110 72 67 59	852 4 55 8 8	77 57 78 28 43	52 52 75 75 75
Potas- slum (K)	0		m m 10 10 m	
Sodium (Na)	202849	689999		3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Mag- nesium (Mg)	18 15 11 11 11 11	1111 9 1121	9.0 10 9.2 8.3	11.9.5 11.9.5
Cal- cium (Ca)	24 4 8 8 8 8	888288	23.88.83	32222
Iron (Fe)	81.0 81. 41. 40.	9.12.89.64.89	88888	8.4.4.6.8
Silica (SiO ₂)	81 00 01 21 21	1000	11 9.6 10 10	4.00.00.00.r. 4.00.00.00.c.
Mean discharge (cfs)				
Date of collection	Oct. 1-10, 1954 Oct. 10-20 Oct. 20-31 Oct. 31, Nov. 1-9 Nov. 10-20 Nov. 20-30	Nov. 30, Dec. 1-10 Dec. 10-20 Dec. 20-30 Jan. 1-10, 1955 Jan. 10-20 Jan. 20-31	Jan. 31, Feb. 6-9 Feb. 10-20. Feb. 21-28, Mar. 1 Mar. 10-20 Mar. 20-31, Apr. 1	Apr. 4-10. Apr. 10-20. Apr. 20-30 Apr. 30, May 1-10. May 10-20. May 22-29.
	Mean Silica Iron Clai nesium (Ra) (R) (Ca) (Mg) (R) (R) (R) (R) (R) (R) (R) (R) (R) (R	Man	Mean Silica (is) From (is) Cal- (iii) Mag- (iii) Sodium (iii) Dicate (is) Chioride (is) Function (is) Function (is) Function (is) California (is) Function (is) Chioride (is) Function (is) Nil rate (is) Outside (is) According (is) Conduction (is) Conduction (is) Postation (is) Conduction (is) Postation (is) Conduction (is) Conduction (is) According	Mean Silica Front Cal. Mage Sodium to sium Potasa- sium Sulfate (Lis) Front Cal. Front Cal. Front Cal. Inchesidate (SiO ₂) Sodium to side (SiO ₂) Bicardia (HCO ₂) Cal. Inchesidate (SiO ₂) Cal. Inchesidate (Cal. <

June 1-10, 1955 June 20-20 June 20-30 June 30, July 1-10 July 10-20 July 20-27, 31, Aug. 1		0.88.9.0 8.8.4.8.7 9.7	44681111	8 0 8 8 1 4	113 123 143 164	28 28 38 49 54 54		75 66 72 84 94	117 101 95 103 128 128	24 22 24 34 46	வ்வ்வ்வ்வ்வ்	11 7.4 10 15 20 28	314 255 281 300 368 419	152 128 119 139 160 176	91 74 80 80 93	458 388 392 449 532 611	7.0	12 12 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15
Aug. 1-10		;	;		;	;		;	;	;	:	;	;	;	;	;	;	:
Aug. 10-20		:	:		:	:		;	:	:	1	;	;	1	;	:	:	:
Aug. 20-31		;	;		;	;		!	:	1	;	;	;	:	;	;	;	;
Aug. 31, Sept. 1-11			.14	34	15			26	120	15	€.	7.2	253	147	101	393	8.9	6
Sept. 11-20		0.6	10		18	24	4.0	26	140	20	<u>دن</u>	6.8	300	166	120	469	8.9	4
Sept. 20-30		0.7	.10		19			20	150	22	23	8.8	327	178	119	204	6.9	s.
Average	1	0	90.0	33	13	1		69	104	24	0.3	13	282	137	80	428	:	2

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT PASSYUNK AVENUE, PHILADELPHIA, PA.--Continued

						- 1	Temperature (°F) of water,	ire (°F)	of wate		r year	October	water year October 1954 to September 1955	eptembe	r 1955							
Dav	Octo	ber	Nove	November	December	nber	January	ıry	February	ıry	March	ch	April		May	June	•	July	Αu	August	September	per
Lay.	шах	min	max	min	шах	min	max	min	max n	min	max	min	max min	n max	min	max min	max	mim	max	min	max	nin
1	1.1	11	1	1	48	48	43	42	41	40	46	H	47	45 60	8	18	L		88	88	8	8
2			88	88	47	47	43	43	41	41	46	4	49	62	52	92	82	82	82	8	80	80
3.			28	88	47	47	43	43	41	41	46	44	53	62	62	75	83	8	88	8.1	79	
4	28		28	88	47	46	42	42	41	40	49	48	54	63	63	!	83	8	81	87	78	
5		6	52	25	46	46	43	43	40	39	49	48	24	63	63	1	25	84	81	81	77	
9			20	20	45	45	43	43	39	38	47	45	26	- 69	69	92	82	82	88	88	77	
7		_	49	49	45	43	43	43	42	8	5.	8.4	57	7.1	71	92	8	8	68	68	80	
8	Ē		2	2	43	43	44	44	41	\$	42	42	28	72	12	16	8	84	68	8	8	
6	16	\$	22	32	43	43	43	43	32	32	4	4	57	74	73	73	87	82	68	8	19	
10	7.	rc	22	22	43	42	43	41	37	36	41	4	24	11	12	20	88	81	81	81	79	
11	74	_	21	51	43	43	42	41	38	37	43	42	24	70	70	;	87	87	98	86	78	
12		-	25	22	17	41	41	41	39	88	4	9	24	=	12	1	87	84	88	22	78	
13	75	_	25	25	4	41	42	40	41	40	23	49	28	2	2	69	88	86	82	82	16	
14	ř	-	25	25	41	41	40	40	40	39	23	2	28	2	20	2	88	98	42	42	76	
15	4	_	22	22	43	41	40	40	38	37	23	53	9	11	77	11	88	88	72	72	79	
16	7	_	52	25	43	43	41	41	37	37	53	25	29	7.7	7.1	11	98	98	75	75	80	
17	~	°	53	53	43	43	41	40	37	37	54	54	28	12	11	73	87	84	2	19	182	
18	15		53	23	44	43	40	39	39	39	25	23	29	71	12	;	88	88	8	8	78	
19.	7	~	24	25	44	44	40	34	41	39	23	53	29	1	12	;	8	88	8	8	11	
20	-	_	26	26	44	43	40	9	43	41	21	27	9	1	7	11	8	88	15	75	11	
21		_	22	57	42	42	40	39	4	43	20	20	62	74	11	46	87	87	73	73	77	
22	69	_	22	26	4	4	88	88	44	43	22	20	62	74	74	80	8	88	4	77	77	
23.			22	22	38	8	88	88	45	44	6	43	63	74	74	81	88	88	18	82	79	
24		_	22	55	8	38	33	38	42	45	45	43	65	75	75	82	8	6	77	11	8	
25		•	22	22	38	38	39	8	42	42	45	42	99	75	92	52	8	6	92	92	16	
26			21	51	88	38	40	38	45	43	47	47	65	78	78	89	88	89	92	16	78	
27	∞	~	22	22	88	38	42	40	44	44	48	48	63	78	18	81	88	8	72	2	73	
28	త	~	20	22	88	38	43	42	4	44	46	45	90	28	18	18	88	88	11	12	72	
29.	ø		20	20	42	30	42	4	1	ŀ	43	43	28	77	E	82	88	88	92	92	72	
30	99		20	2	43	42	41	41	1	1	42	42	28	78	78	82	88	88	8	8	11	
31			1	1	44	43	41	40	-	1	42	43	;	78	78	:	87	81	48	92	1	
Average	73		23	53	43	43	43	42	40	39	47	46	28	11	11	1	87	81	81	81	77	

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT EDDYSTONE, PA.

RECORDS AVAILABLE. --Chemical analyses: August 1949 to September 1955.
REMARKS. --Samples taken at center of stream approximately 3 feet from bottom.
Additional data published in WSP 1262, Chemical characteristics of Delaware R'ver water, Trenton, N. J. to Marcus Hook, Pa.

Chemical analyses, in parts per million, water year October 1954 to September 1955

Date	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conduct- ance (microm- mhos at 25°C)	pΗ	Bio- chemical oxygen demand ²	Dissolved oxygen
Oct. 4, 1954	2,340	195	951	6.5	1, 2	1.7
Nov. 4	22, 200	375	1,560	6.5	1, 9	3.5
Dec. 1		10	151	6.2	1,4	7.3
Jan. 3, 1955	19,800	10	168	6.1	3.4	8.2
Feb. 1	12,700	20	233	5.8	. 8	6.6
Mar. 2	29, 700	12	219	6. 1	3.8	6.0
Apr. 4	12,300	8.0	165	7.2	2, 2	8.4
May 2	10,900	11	188	6.2	1, 5	2.4
June 1	6, 180	23	288	6.2	6.0	1.5
July 6	2,870	43	368	6.3	1,6	2.7
Aug. 2	1,970	535	2, 120	6.3	.0	3.5
Sept. 6	7,810	9.5	201	6.4	.0	1, 2

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER BASIN -- Continued

DELAWARE RIVER AT MARCUS HOOK, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1955. REMARKS.--Data Obtained from analyses of center river samples taken approximately 3 feet from surface and 3 feet from bottom. For additional data refer to WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa.

1																							
	Dis-	solved oxygen	1.9	;	4.5	;	8.8	;	7.2	1	8.8	;	•	0.4	:	2.5	:	2, 75	: ;	3.9	;	1.4	1
	Bio- chem-	ıcaı oxygen demand	6.0	1	3.5	:	٥.	:	3.4	:	1.4	;		,	1	12.9	;	4	;	1.2	:	0.	:
	;	표.	6.4	7.3	6.5	6.6	6.9	8.8	6,6	7.1	5.4	6.0	ı,			5.1	2.0	6.4	6.9	5.9	6.0	6.4	7.3
	Specific conduct-	(micro- mhos at 25°C)	1,900	1,870	2,230	2,630	165	165	172	171	184	181	910		211	615	640	621	603	2,950	3, 630	188	191
	ness ICO _s	Non- carbon- ate	;	223	ł	315	;	37	;	35	;	51		:	ន	;	101	;	96	;	372	;	40
55	Hardness as CaCO ₃	Calcium, Mag- nesium	;	243	1	330	;	49	1	46	:	22		6	3	;	103	;	111	;	378	;	62
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved	on evap- oration at 180°C)	;	1,060	;	1, 500	;	119	;	114	;	153			COT	;	391	;	358	1	2, 140	;	150
954 to Se	Nitrate	(NO _s)	;	5.2	;	8.5	1	6.5	:	8.9	;	6.1			2	{	5.7	;	6.4	1	2.0	;	7.0
ctober 1		ride (F)	:	9.0	;	∞.	;	=:	;	~!	;	۳.				;	७.	;	9.	;	1.0	;	.2
er year O	Chlo-	ride (Cl)	487	463	562	92	11	2	12	=	8.0	9.0	7	::	77	105	118	120	110	800	1,020	22	10
llion, wat	Sulfate	(804)	*	136	1	181	;	35	;	38	;	54			2	;	86	;	95	!	254	!	45
ts per mi	Bicar-	bonate (HCO _s)	•	24	;	81	!	15	;	13	;	ഹ		•	۰	;	67	:	18	!	2	;	28
s, in par	Po- tas-	sium (K)																					
al analyse	Sodium	(Na)	;	244	1	412	;	8.1	;	9.5	;	8.2		,	77	;	73	1	29	;	260	1	9.4
Chemic	Mag-	Sium (Mg)	!	36	;	26	;	4.0	!	8.	!	4.3			۰ ۵	;	=	!	2	1	67	!	5.5
	Cal-	cium (Ca)	;	38	;	40	;	13	;	13	;	15		,	97	;	g	;	23	;	41	;	16
	Tron	(Fe)	1	0.02	;	.0	7	8	1	. 14	1	. 16	-	6	3	;	0.	-	8		.38	1	. 05
!	Siltos	(SiO ₂)	1	2.3	;	4.3	;	5.6	1	6.6	;	5.7			o.	;	2.8	1	2.1	1	4.7	!	7.1
	۰	Trenton (cfs)	2,340		22, 200		15,400		19,800		12, 300		000			6, 180		2,870		1,970		7,810	- 1
		Date of collection	Oct. 4, 1954 Top	Bottom	Nov. 4 Top	Bottom	Dec. 1 Top	Bottom	Jan. 3, 1955 Top	Bottom	Apr. 4 Top	Bottom	Mon ?		Hottom	June 1 Top	Bottom	July 6 Top	Bottom	Aug. 2 Top	Bottom	Sept. 6 Top	Bottom

DELAWARE RIVER BASIN -- Continued

RED CLAY CREEK AT WOODDALE, DEL

LOCATION: --Temperature recorder at gaging station, 12 feet upstream from bridge on State Highway 48, 0.3 mile south of Wooddale, New Castle County, and DR.13 miles on the of Washallton.

BRIGHAGE AREA. --47.0 square miles.

RECORDS AVAILABLE. --Water temperatures: April 1953 to September 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 87°F July 17, Aug. 2, 6; minimum, freezing point on several days during January and February.

EXTREMES April 1953 to September 1955.--Water temperatures: Maximum, 87°F July 17, Aug. 2, 6, 1955; minimum, freezing point on several days during minimum, anoths: --Water representations of discharge for water year October 1955 given in WSP 1382.

	. 1	1																														1	ı
	September	min	2	1	71	2	02	71	71	89	99	99	69	8	2	8	99	20	2	2	22	:	98	3 2	5 %	8	: :	200	63	2	2	:	67
	Septe	max	72	72	22	72	72	73	75	22	89	10	=	2	67	99	E	7.9	12	72	22	:	12	9 4	8 6	6	; ;	88	89	67	65	:	2
	ust	min	76	8	28	78	78	81	42	29	7:	57	16	72	72	72	74	75	2	75	<u>4</u> 4	:	7.		2 :	2	: :	202	7	2	22	12	74
	August	max	82	84	25	82	88	87	8	8	18	7.7	82	76	72	75	77	7.8	1	11	F 22	:	2 2	3 2	. 4	2.5	! i	52	2	22	73	74	18
	July	min	75	26	E	28	82	82	82	16	78	18	28	18	74	72	74	79	19	81	38		2 2	2 2	2	29.	: ;	32	82	18	16	16	18
	ď	max	42	83	8	82	86	82	8	85	8	2	25	æ	8	8	82	8	84	98	2 8		88	8 8	3 3	8	1 2	88	8	25	18	78	æ
	ie	min	67	99	65	99	99	89	69	63	26	28	7	8	65	65	99	88	2	11	22		22	4 6	2 2	2 8	; ;	67	89	20	72	:	6
	June	max	69	89	2	89	7.	92	16	72	40	2	65	69	88	8	72	76	20	19	75	:	92	2 5		4	: ;	32	74	18	78	-	73
55	May	min	62	61	25	29	89.	89	49	67	63	22	61	61	49	25	63	89	92	61	88	;	99	5 6	3 2	: 23	: ;	20	69	69	74	69	99
water, water year October 1954 to September 1955	W	max	99	88	89	2	74	73	2	2	89	65	65	69	99	67	2	7	69	88	69	!	23	2 2	2	2.0	: ;	2.48	20	11	18	75	11
o Septe	E	min	49	25	54	8	53	2	21	48	49	25	22	22	54	25	28	9	82	22	25		59	5 6	8	3 8	: :	200	55	29	29	1	26
r 1954 t	April	max	55	26	28	28	28	26	24	23	55	9	61	8	57	88	61	65	83	64	65	;	63	9	3	8	: :	22.5	8	9	99	:	90
Octobe	rch	min	45	46	44	46	44	42	39	37	\$	46	2	20	25	23	48	40	84	46	4 45		46	1 7	45	47	; ;	6. -	38	40	43	46	45
er year	March	max	20	20	48	48	46	44	42	40	46	21	23	24	26	53	20	54	21	48	50		48	4 4		5 25	: :	45	42	44	49	25	49
ir, wate	lary	min	32	32	32	32	32	32	35	36	36	8	4	34	34	34	34	36	39	39	£9		\$:	7 7	: \$	5 6	: :	5 4 2 6 7	42	· ;	;	:	37
뛍	February	max	33	32	8	83	33	32	38	88	68	42	44	4	32	\$	98	68	42	42	43.62		42	48	4	4	: :	4 4	46	1	;	:	39
Temperature (°F)	ary	min	39	\$	39	4	40	40	38	37	98	ş	98	34	36	34	34	34	33	33	323		3 33	3 7	: :	32	: 8	2 22	S	33	83	33	35
mperati	January	max	41	42	41	43	41	42	40	38	37	20	31	œ	38	8	37	38	35	83	35		325	9 %	3 %	8 25	; ;	98	23	33	33	33	37
Ľ.	mber	min	43	42	38	37	38	34	34	34	\$ 8	90	38	98	37	8	42	4	39	39	38	: :	8	3 5	8 8	34	: 8	200	S	7	43	41	37
•	December	max	43	43	42	38	40	39	34	34	38	2	40	39	38	42	44	43	41	43	39		* :	3 5	3 5	. 5	; ;	3 %	41	45	4	43	39
	November	min	46	46	48	42	47	44	41	\$	4:	41	40	41	42	40	42	40	43	20	55		27	7	4.5	5.	: :	244	41	44	43	:	44
	Nove	max	49	21	25	48	49	48	46	45	46	40	4	46	46	46	45	43	20	53	28		22	4.5	4	47	;	42	44	46	44	:	48
	ber	min	70	5	20	=	69	63	29	24	22	3	5	8	99	88	89	63	28	25	% 24	: ;	83	3 2	3 6	54	: 6	26	5	25	20	48	69
	Octobe	max	72	12	73	72	11	69	83	24	8	40	99	67	2	2	5	89	62	28	56		26	8 %	57	22	: :	2 2	29	22	53	51	62
	Ç	Cay	1	2	3	*	5	6	7	8	6.0		11	12.	13	14.	15	16	17	18.	20.		21	23	24	25	86	101	28	29	30	31	Average

DELAWARE RIVER BASIN -- Continued

BRANDYWINE CREEK AT WILMINGTON, DEL.

LOCATION.--At Henry Clay Bridge in Wilmington, New Castle County, 0.2 mile unstream from gaging station, and 4.4 miles upstream from mouth.

DRAINAGE AREA.--314 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1952 to July 1953.

Sediment records: December 1946 to September 1955.

EXTREMES, 1954-55.--Sediment concentrations: Maximum daily, 944 ppm Aug. 13; minimum daily, 1 pro- cerember 1940.

daily, 1913-33. --Sediment concentrations: Maximum daily, 944 ppm aug. 13; minimum daily, 1 ppm on several days during the year.

Sediment loads: Maximum daily, 20,700 tons Aug. 13; minimum daily, less than 0.50 ton Oct. 2, 10; Feb. 3, 4, 5.

EXTREMES, 1946-55. --Sediment concentrations: Maximum daily, 1,420 ppm July 9, 1952;

minimum daily, 1,420 ppm July 9, 1952; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 20,700 tons Aug. 13, 1955; minimum daily, less than 0.5 ton on many days.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

		Octobe		nt. water yea	Novem			Decem	ber
- 1		Suspende	d sediment		Suspende	d sediment		Su mende	sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cls)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	82	5	1	128	12	4	184	5	2
2	82	2	(t)	165	23	s16	160	4	2
3	88	2	1	390	52	s 55	151	7	3
4	85	4	1	220	18	11	145	h	
5	82	4	1	172	10	5	142	2	1
6	85	4	1	157	15	6	136	[]	
7	100	8	2	142	15	6	120	К	
8	90	1 4	ĩ	125	Ťğ	3	125	} 2	1
9	82	l â	ī	118	8	3	164	11 -	
.0	82	2	(t)	112	6	2	366	4	4
1	80	3	1	108	8	2	250	4	3
2	78	4	i	108	8	2	184	4	2
13	78	14	3	105	8	2	168	4	2
4	78	18	4	105	10	3	188	4	2
5	80	14	3	105	8	2	275	5	4
16	118	14	5	105	10	3	250	4	3
17	120	1 18	3	108	8	2	192	2	ı
18	100	6	2	110	7	2	282	10	s10
9	92	5	î	118	10	3	468	18	s 10 s 22
0	100	, ž	i	260	12	s 10	290	7	5 2 5
1	100	2	1	730	101	s 222	190	h	
2	95	2	1 1	544	48	s 222 s 87	155	2	1
3	90	4	i	265	16	11	176	ا * ا	1
4	85	2	i	265 192	10	4	176	IJ	
5	85	5	i	172	5	2	168	h l	
6	0.5				_				
7	85 92	2	1	154	5	2	151	2	1
8		3 5	1 1	145	5	2	148		
9	100 200		1	142	4	2	154	۲.	
0		25	s 16	270	13	9	230	4	s3
1	225 160	13 7	8 3	270	10	7	727 584	110 112	sa 300 s 200
Total.	3,099		69	5, 845		490	7, 099		582

s Computed by subdividing day. t Less than 0.50 ton.

a Computed from partly estimated concentration graph.

DELAWARE RIVER, BASIN

DELAWARE RIVER BASIN -- Continued

BRANDYWINE CREEK AT WILMINGTON, DEL .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued January Suspended sediment March February Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Mean Day dis-Tons dis-Tons disconcenconcencharge charge (cfs) per day charge per day per tration tration tration (cfs) (cfs) day (ppm) (ppm) (ppm) 1.... 2. 3. (b t) --(b t) s 26 5. ı (b t) 1, 120 s 289 s 167 b11 7. 3, 290 ъ5, 200 1, 180 s 557 8. 9. 10. 11..... 12. 13. 14. 16..... 17. 18..... 19. 20. 21..... 22. s 2, 660 1 860 23..... ī 1.500 s 1, 450 24. 26. 543 27..... 28. ī 29. 30. ß __ __ 31..... Total. 5,352 10, 975 5, 661 17,005 5, 404 April May June 1..... 2. 5 3. 4. 5. 6. 5 7. 8. s 110 9. 1,060 10. s 72 11. s 40 12..... 1,770 13. 14. s 15 s 50 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. ß 2<u>35</u> 31.

Total .

6, 131

9, 488

5,312

^{9,943} s Computed by subdividing day.

t Less than 0, 50 ton.

b Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

BRANDYWINE CREEK AT WILMINGTON, DEL. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		July	<u> </u>	1	Augus		TOUCH-COMM	Septem	ber
			d sediment			ed sediment		Suspende	d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	155	8	3	90	10	2	606	3	5
2	158	6	3	88	6	1	522	2	3
3	143	7	3	84	4	1	487	3	4
4	129	8	3	74	5	1 1	474	2	3
5	127	7	2	70	5	1	450	2	2
6	124	6	2	84	4	1	432	1	1
7	121	6	2	106	6	2	408	2	2
8	124		b3	122	9	3	372	3	3
9	121	9	3	152	9	1 4	354	5	5
10	147	12	sa 6	106	6	2	366	8	8
11	197	17	s 9	311	137	s 161	366	4	4
12	158	10	4	1, 170	237	s 890	354	n	l
13	121	8	3	8,010	944	s 20, 700	312	} 3	3
14	116	10	3]	5, 750	682	s 11,900	306	μ	1
15	111	12	4	4, 510	292	s4,930	312	h _	_
16	111	12	4	832	25	56	312	} 2	. 2
17	106	8	2	683	95	175	306	IJ	
18	102	5	1	2,870	335	s4,360	306	h ·	
19	102	4	1 1	9,660	288	s 8,960	306	} 2	2
20	95	5	1	1, 600	60	259	318	Ų	
21	95	6	2	1,020	30	83	290	h '	
22	93	9	2	1, 270	88	s 320	270	} 3	2
23	86	11	3	909	40	98	275	Ų,	
24	95	15	4	714	20	39	456	4	5
25	124	18	6	658	10	18	474	4	5
26	104	17	5	613	12	20	330	2	2
27	93	14	4	613	10	17	290	1	1
28	84	11	2	613	10	17	384	4	4
29	82	14	3	543	8	12	372	4	4
30	84	16	4	522	5	[7	306	3	2
31	90	15	4	676	10	18			
Total .	3, 598		101	44, 523		53,058	11,116		90

Total discharge for year (cfs-days). 134, 174
Total load for year (tons). 71, 183

s Computed by subdividing day.
a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN DELAWARE

Chemical analyses, in parts per million, water year October 1954 to September 1955

	Chemical a	naryses,	ın pare	s per mi	illon, wa	ter year C	Jewber .	and model	remper	1900		
Date	Discharge	Sodium	Potas-	Bicar-	Sulfate	Chloride	Nitrate	Hardn as Ca(CO3	Specific conduct- ance		
of collection	(cfs)	(Na)	sium (K)	bonate (HCO ₃)	(SO₄)	(CI)	(NO ₃)	Calcium, mag- nesium	Non- carbon- ate	(micro- mhos at 25°C)	pН	Color
			CHRI	STINA I	RIVER A	т сооси	S BRID	Æ				
Aug. 10, 1955 Sept. 27	1.40 2.66	1	1 4.6	42 27	15 10	6 4	4.3 4.6	38 32	4 10	138 105	6.4	
			I	ED CLA	CREEK	AT WOO	DDALE					
Aug. 10, 1955	12	3	0	88	33	35	3.1	92	20	348	6.7	
			RI	D CLAY	CREEK	NEAR WO	ODDALE					
Aug. 25, 1955	56.5	1	0	57	20	9	4.7	62	15	192	6.7	
			REI	CLAY	CREEK A	T MARSH	ALLTOW	ī				
Sept. 21, 1955.						16				245	7.9	
			SI	ELLPOT	CREEK	AT WILM	INGTON					
Aug. 5, 1955 Aug. 26	0,890 1,61	1 1	9 4	80 69	33 36	18 12	2.0 3.1	86 83	2 41	275 243	8.3 8.8	
			Wi	HTE CLA	AY CREE	K ABOVE	NEWARI	(
Aug. 10, 1955	13.5		8.2	78	13	6	2.4	70	6	189	7.1	
Aug. 25 Sept. 28	61.0 54.2		6.1 4.0	62 60	15 13	6	5,5 5,3	66 64	15 15	172 160	7.6	
	·	<u> </u>		·		EK AT N				L	1	1
Aug. 10, 1955	23		9.6	70	16	18	1.9	80	23	225	6.7	
			WE	HTE CL	AY CREE	K NEAR I	NEWARK					•
Aug. 25, 1955	90		7.9	58	16	14	5.2	71	23	199	6.6	
			BRA	NDYWIN	E CREEK	AT WILI	MINGTO	Ī				
Mar. 3, 1955	290		7.0	36	25	7.0	4.9	54	24	158	7.1	22
Apr. 1	354 250		4 0	43 49	26 24	8,0	7.2 3.8	48 56	13 16	157 159	7.6	
June 3	167	li		41	27	7.5 8.0	4.0	50	16	155	6.5	
Aug. 5	73.6	1 1		74	27	10	.7	72	11	222	6.8	
_			BR	MDYWIN	E CREEK	AT NEW	CASTLI	8				
Jan. 7, 1955	a 270		5, 1	37	26	7.5	6.4	62	32	172	7.0	
											_	

a Discharge at Wilmington.

SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER AT CONKLIN, N. Y.

LOCATION.--At gaging station at highway bridge at Conklin, Broome County, three-quarters of a mile downstream from Little Snake Creek and 3½ miles down-stream from Ensight and State line.

STRAINGE AREA.--2,240 square alies, approximately,

RECORDS ANALLELE,--Chemical analyses: _October 1954_to September 1955.

Water temperatures: October 1954 to September 1955.

EXTREMES, 1954-55, --Dissolved solids: Maximum, 179 ppm July 25, 25, 30, 31; minimum, 52 ppm Mar. 1-10.

EXTREMES, 1954-55, --Dissolved solids: Maximum, 179 ppm July 25, 26, 30, 31; minimum, 52 ppm Mar. 1-10.

Bachesis: Maximum, 91 ppm July 25, 26, 30, 31; minimum, 28 ppm Aug. 19.

Specific conductance: Maximum daily 220 micromhos July 25, 26, 30, 31; minimum, freezing point on several days during December, January and February.

EXHARKS, --Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1954 to September 1955 given in WSP 1382. Stream frozen over Feb. 4, 7-23.

Chemical analyses, in parts per million, water year October 1954 to September 1955

tered 11:11:11 1111111 1111111 Oxygen consumed Unfil-tered 1111 1111 1111 :::: Color 1321 1321 ကက 18:12 7.2 9.7.7 ł ł 1.1 펁 Specific conductmhos at 25°C) micro-93.3 93.3 ance 150 165 161 168 152 52 8 52 carbon-Non 11004 - 21 16 17 17 113 113 114 Hardness as CaCO, **Fotal** 71 68 77 77 72 74 74 75 39 61 64 64 73 73 Dissolved oration at 180°C) solids (residue on evap-58 55 55 71 71 54 188 188 1 160 Nitrate (NO₃) Fluo-ride (F) 1 00 1 0.0.0 19119 4.4 0.0 유 (C.D. Sulfate (SO₄) 84225 22 22 12 222 17 Bicar-bonate (HCO₃) 66 77 73 70 67 867 29 36 54 41 41 70 75 ł 16.6. | | 6.6.6. 100 œ ۱ ۱ °°. Po-tas-sium (K) Sodium (Na) 3.0 : : 4.6 5.1 1 1 : : 2.9.2 2.0.8 Mag-ne-sium ; ŀ 3.0 ł ł ; 1 1 Cal-Cium (Ca) 12111444 11811 : 42 ==== 182 1 4 8 ŀ Fe) Silica (SiO₂) 4·4· 1.1 1 1 00 ľ ; ; 4, 5 1 discharge 2,440 7,550 6,680 5,670 7,430 2,520 1,720 526 5,990 1,400 Mean (cts) 434 370 444 507 Feb. 1-3, 5-6..... 1-10, 1954..... 21-29 21-24, 26-29, 31 21-31..... Date of collection 21-22, 25-31. 1-10, 1955 11-20 Nov. 1-2 .. Nov. 3-10 . 21-30 21-31 1-10 30a Set t t t t Nov. Dec. Dec. Jan. Nov. Nov. Nov. Nov. Dec. Jan. Jan.

Average of monthly cross-section

:::::::::	111111111	1 12 12 2 1 1 1	18.14.1
11111111	111111111	1 10 15 20 1 1 1	12.14.1
2 - 8 - - 6	1 8 8 8 2 5 1 1	811 842 844 1	m m
0 10117		8	6.1.7
88.5 86.6 84.0 97.7 114 116 1119 121	112 117 126 126 141 154 118	117 114 138 158 156 163 186 220	219 179 147 75, 9
21 6 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	111021000001	112 113 113 113 113 114 117 117 117 117 117 117 117 117 117	13 13 13 13 13 13 13 13 13 13 13 13 13 1
8 8 8 8 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	44000004 8404864	24 60 60 60 1 1 1 6 1 1 6 1 1 1 1 1 1 1 1	26: 156
4 2 2 2 2 2 2 2 3 3 3	80 102 101 1101	83 78 83 108 126 179	101 188 1
4 8 8 8 8 8 8 1 8 1 1 1	10111102	6 1 1 2 1 2 2 2 3 3 3 1 1	
0,10,7,1,10,1	101000111	6611444411	10.10.1
4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0004000	သည်သည်တွင် အသည် သည်သည်သည်သည်သည်	7.0 4.4 7.0 0
11 8. 8. 6 10 10 10 10 10 10 10 10 10 10 10 10 10 1	16 9.8 11 14 11 11 11 11 11 11 11 11 11 11 11 1	111 113 113 113 114	1 91 181
2 8 8 8 8 8 4 4 6 6 5 9 4 8 8 8 8 9 9 9	1444 1452 1484 1844 1844 1844 1844 1844 1844 184	52 57 77 70 74 88 5113	c 109 76 59 20
6:10,7,7,14,7,	17.18.8.11	11.2.1.881.2.00	10,18,1
2 1040 100	0 0 0 0	84 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.7
6 1 4 5 5 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18.11.2.111	1.838, 9.89.0.0.	3.6 (CO ₃).
12 13 13 14 17 17	16 18 18 18 18 11 18	118 118 22 22 22 22 22 16	6.2 23 4. 4.1 19 3. 19 3. 19 3. 19 7. 19 7. 19 7. 19 7. 19 7. 19 7.
1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	811111111111111111111111111111111111111		on of ca
ຍ 4.4.ນີ້ ບໍ່ສ.4 ່ ບໍ່	4 0.0101	2.4 3.1 2.2 7.2 4.2 5.4 15	5.2 4.1 lon. er milli
9,350 11,600 11,600 13,100 8,970 5,670 6,630 6,830 4,650	6, 220 5, 190 3, 000 1, 460 1, 340 2, 390 2, 830	1,980 1,380 870 694 625 406 313 287 287	253 222 1,710 7,760 rcross-secti of 5 parts p
Feb. 24-27, 1955. Feb. 28-27, 1955. Mar. 11-20 Mar. 21-31 Mar. 31-3 Apr. 11-0 Apr. 11, 20.	Apr. 11-20 Apr. 21-30 Apr. 21-30 May 11-10 May 21-27 May 21-37 May 313, May 21-31	June 1-10. June 11-20. June 21-30. June 21-30. June 30. July 11-10. July 21-34. July 21-31. July 21-31. July 21-31.	Aug. 1. 253 Aug. 2.10 222 Aug. 2.10 222 Aug. 2.10 222 Aug. 11-18, 20 1.710 Aug. 19-18, 20 1.710 Aug. 19-18 Average of monthly cross-section. b includes equivalent of 5 parts per c Includes equivalent of 30 parts per c Incl

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SUSQUEHANNA RIVER BASIN--Continued

SUSQUEHANNA RIVER AT CONKLIN, N. Y.--Continued

		, 5							1		
	Oxygen	Fil- tered	:	8.8	:	2,2	2.6	3.5	:	:	
	S cons	Unfil- tered	:	5.7	;	5	4.1	5.1	;	!	
		Color	_ :	60	:	~	~	•	:	6	
		H.	-	7.4	:	7.8	7.2	7.3	1	!	
	Specific conduct-	(micro- mhos at 25°C)		122	124	134	137	147	144	133	
	ness aco,	Non- carbon- ate		14	10	6	80	12	21	13	
ontinued	Hardness as CaCO,	Total		\$	22	53	54	62	62	26	
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	Dissolved solids (residue	on evap- oration at 180°C)	-	74	;	80	78	82		85	
o Septen	Nitrate	(NO3)	:	1.3	;	•	٠.	∞.	:	1.5	
er 1954 t	Fluo-	(F)	-	0.1	:	•	•	0.		0.1	
ar Octob	Chlo-	(CI)	:	4.6	4.0	4.2	4.0	4.5	4.2	4.1	
water ye	Sulfate	(30°)	:	14	13	13	13	13	13	13	
million,	Bicar-	(HCO ₃)	:	43	21	54	20	61	63	55	
parts per	Po- tas-	Stum (K)		1.6	ŀ	1.4	1.4	1.2	:	6.0	<u> </u>
dyses, in	Sodium	(Na)	:	3.7	!	4.2	3.7	4.3		3.3	
ical ana	Mag- ne-	sium (Mg)	:	3.5	;	3.5	2.9	3.6	-	2.6	
Chen	Cal-	(Ca)	:	14	;	16	11	19	;	18	
	Iron	(Fe)	90.0	. 18	1	Ξ	91.	. 12	i	0.15	
	Silica	(SiO ₂)	;	7.2	!	6.7	3.3	5.8		7.3	ig.
	Mean	aischarge (cfs)	;			745			291	3, 420	cross-sectiv
	ĺ	Date of collection	Aug. 11-20, 1955	Aug. 21-31	Aug. 31 a	Sept. 1-10	Sept. 11-20	Sept. 21-29	Sept. 30	Average	a Average of monthly cross-section

SUSQUEHANNA RIVER AT CONKLIN, N. Y .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955
_Once-daily measurement at approximately 9 a. m.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	46	39		33	34		55	63	75	80	72
2	70	45	38		32	34		56	62	77	77	70
3	70	41	36			34		57	61	82	78	70
4	70	41	34			35	1	58	61	80	79	71
5	68	41	34		32	36		61	66	82	80	72
6	64	40	33	}	32	34		61	66	80	79	71
7	57	42	32			34		59	69	79	74	70
8	52	40	33			35		61	70	80	74	66
9	54		33			32		56	67	81	72	65
10	59	38	33			35		58	66	82	70	65
11	60	38	34			l	49	55	68	79	75	68
12	64	40	34				49	56	69	77	73	67
13	66	38	33		l		47	59	66	78	71	63
14	65	38	33		l	٠	48	60	64	77	71	63
15	68	40	35		1		50	80	63	80	73	64
							30	"	03	00	13	04
16	65	39	36				50	64	66	81	76	66
17	59	. 37	33				50	61	71	81	79	66
18	55	45	34				50	60	74	81	77	69
19	54	47	35		1	l	53	61	74	80	71	70
20	52	50	34				53	60	74	76	73	70
21	50	45		35			54	20	74	77	74	66
22	50	43	33	43			56	62 70	75	79	74	64
23	49	43		43	1	}	54	68	75	80	70	61
24	52	41	33	33	33		50	71			70	
25	51	40	33						75	76	72	62
20	31	10	33	33	32		53	71	74	76	71	62
26	53	40.	34	33	33		50	70	69	75	74	60
27	55	40	33	32	34		48	68	69	79	73	60
28	52	40	35	32	35		47		71	78	73	60
29	50	40	35	32	1 30		50	68	73	77	71	60
30	50	40	36	33	1		51	68	74	77	72	61
31			35	33		46		64		80	74	
Aver- age	58	41	34					62	69	79	74	66

COREY CREEK NEAR MAINESBURG, PA.

LOCATION.--At gaging station, 1.1 miles downstream from Mainesburg, Tioga County, 3½ miles east of Mansfield, and 4½ miles upstream from mouth.

DRAINAGE AREA.--12.2 square miles.

RECORDS AVAILABLE.--Sediment records: May 1954 to September 1955.

EXTREMES, 1954-55.--Sediment concentrations: Maximum daily, 542 ppm Mar. 22; minimum daily, no flow on several days during July and August.

Sediment loads: Maximum daily, 150 tons on Mar. 22; minimum daily, 0 tons on several days during July and August.

EXTREMES, May 1954 to September 1955.--Sediment concentrations: Maximum daily, 939 ppm, May 29, 1954; minimum daily, no flow on several days during July and August 1955.

Sediment loads: Maximum daily, 175 tons June 1, 1954; minimum daily, 0 tons on several days during July and August 1955.

REMARKS.--Records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Station established May 1954 as an index station for the Corey Creek Watershed Project and part of an SCS Pilot Watershed study of Corey Creek. Records of discharge for water year October 1954 to September 1955 given in WSP 1382. WSP 1382.

Suspended sediment, water year October 1954 to September 1955

		Suspe	naea searm	ent, water ye	ear October	1994 to Septe	mper 1900		
		October			November			December	
ſ		Suspended	i sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	N'ean concen- tration (ppm)	Tons per day
1,	0.7 .7 .7 .8 .7	2	(t)	0.9 1.0 1.9 2.9 3.2	2	(t)	2.9 2.6 1.8 1.9		(t)
6 7 8 9 10	.9 .7 .7 .7 .8	2	(t)	3.3 2.3 2.0 2.0 1.8	}	(t)	1.5 2.1 2.4 2.1 2.3	4 2	(t) (t) (t)
11 12 13 14	.9 .8 .7 .8 3.3	5	(t)	1.6 1.5 1.4 1.4	3	(t)	2.0 2.0 2.0 13 25	 145	(t) a 10 s 12
16 17 18 19	5.7 2.0 1.5 1.6 1.3	5	(t)	1.4 1.5 1.4 1.4	2	(t)	10 13 38 22 17	 4 	a.2 .1 a16 a1.2
21 22 23 24	1.2 1.1 1.0 1.0	2	(t)	2.3 2.7 2.3 2.0	2	(t)	12 11 12 9.0		b1.3
25 26 27 28	.9 .9 .9	2	(t)	2.1 2.0 1.9 1.9 3.3	1 	(t) (t) (t)	7.5 6.5 6.8 16 25	} }	b.2 e.6 a1.4
29 30 31	.9 .9 .8	2	(t)	3.3		(t) (t) 	163 43	177 19	s109 2.2
Total .	36.5		0.4	59.6		0.3	477.3		158.9

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed on basis of infrequent samples.

COREY CREEK NEAR MAINESBURG, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		Suspended		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
		January		I I	February			March	
ŧ	Mean	Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day		Mean		Mean	Mean		Mean	Mean	T
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
i	charge	tration	per	charge	tration	per	charge	tration	per
l	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
-				H	(ррш)				
1	26		a 0.4	1.3	n.		61	364	s 66
2	31		a2.5	1.2	} 4	(t)	34	40	3.7
3	17		e.4	1.1	Ų		22	20	1.2
4	16		e.2	1.3	h		118	98	s 61
5	13	4	.1	1.2	ll .		72	77	s13
1			1	1	4	(t)		i i	
6]	18	43	2.1	1.2	IJ		51	60	8.3
7	12	U		2.0	11	0.1	30	25	2.0
8	9.0	li .		1.8	10	.1	25	55	3.7
9	8.0	11	l .	1.5	5	(t)	26	67	s 4.8
10	7.4	15	4	1.7	67	3	24	120	7.8
	* * * *	H		1	,			120	• • • •
11	6.0	łł –	1	4.0	h	1	47	200	s 28
12	4.5	K		2.7	3	(t)	33	50	4.5
13	4.2	11		2.0	1	(1)	24	20	1.3
	3.8	1)	1	1.0	K		20	10	.5
14	3.3	2	(t)	1.8	ll .			20	.9
15	3.3	J)	!	2.1	} 4	(t)	16	20	.9
10		11		١.,	[]	`~			
16	3.0	U D		1.9	ľ		31	51	s5.1
17	2.7	11		1.7	H		18	20	1.0
18	2.3	11		1.6	} 10	.1	16	18	.8
19	1.9	5	(t)	1.7	ν.		14	20	.8
20	1.6	11	1.7	2.4	80	.5	12	20	.6
1		II .		l	1		1		
21	1.4	Ü		5.0	60	.8	26	90	6.3
22	1.8	D		15	100	4.0	77	542	s 150
23 [1.7	li .		50	105	14	45	50	6.1
24	1.5	11 .	443	30	42	3.4	32	30	2.6
25	1.4	8	(t)	18	20	1.0	22	20	1.2
1		[[l		1		
26	1.5	li .		13	10	.4	19	15	.8
27	1.0	K		11	l s	.3	15	13	.5
28	1.1	11 .		19	30	1.5	12	25	.9
29	1.3	} 14	.1	19		1.5	11	25	.7
30	1.4	14	.1				10	20	.5
30		11					10 1	20	
					1	1	1 04	10 1	9
31	1.3	ν					9.4	10	.2
Total.	206.1		8.6	197.2		26.9	9.4 972.4	10	.2 384.8
			8.6	197.2	1	26.9			
Total.	206.1	April			May		972.4	June	384.8
Total .	9.0	April 10	0.2	8.3	1	26.9	972.4	June	0.1
i	9.0 8.3	April 10 6	0.2	8.3 7.0	May		972.4 3.8 2.9	 June 7 3	0.1 (t)
i 2 3	9.0 8.3 7.3	April 10	0.2	8.3 7.0 6.1	May		3.8 2.9 2.3	 June 7 3 3	0.1 (t) (t)
i 2 3 4	9.0 8.3 7.3 6.7	April 10 6	0.2 .1 .1	8.3 7.0 6.1 5.6	May	0.1	972.4 3.8 2.9 2.3 1.8	 June 7 3 3 3	0.1 (t) (t) (t) (t)
i 2 3	9.0 8.3 7.3	April 10 6 6	0.2	8.3 7.0 6.1	May 4		3.8 2.9 2.3	 June 7 3 3	0.1 (t) (t)
1 2 3 4 5	9.0 8.3 7.3 6.7 5.8	April 10 6 6	0.2 .1 .1	8.3 7.0 6.1 5.6 8.5	May 4	0.1	972.4 3.8 2.9 2.3 1.8 1.4	 June 7 3 3 3 4	0.1 (t) (t) (t) (t) (t)
1 2 3 4 5	9.0 8.3 7.3 6.7 5.8	April 10 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5	May 4	0.1	972.4 3.8 2.9 2.3 1.8 1.4	 June 7 3 3 3 4	0.1 (t) (t) (t) (t) (t)
1 2 3 4 5	9.0 8.3 7.3 6.7 5.8 5.6 5.6	April 10 6 6	0.2 .1 .1	8.3 7.0 6.1 5.6 8.5	May 4	0.1	972.4 3.8 2.9 2.3 1.8 1.4	June 7 3 3 3 4 7 5	0.1 (t) (t) (t) (t) (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3	May 4	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1	June 7 3 3 4 7 5 3	384.6 0.1 (t) (t) (t) (t) (t) (t) (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8	April 10 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4	May 4	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0	June 7 3 3 3 4 7 5 3 4 4	384.6 0.1 (t) (t) (t) (t) (t) (t) (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3	May 4	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1	June 7 3 3 4 7 5 3	0.1 (t) (t) (t) (t) (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8	May 4	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4	June 7 3 3 3 4 7 5 3 4 4	0.1 (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4 5.8	May 4 4 6 7	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4	June 7 3 3 3 4 7 5 3 4 4	0.1 (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8	May 4	0.1	3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4	June 7 3 3 3 4 7 5 3 4 4 3	0.1 (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4	April 10 6 6 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4 5.8	May 4 4 6 7	0.1	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.2 2.0 1.4	June 7 3 3 4 7 5 3 4 4 3 4 6	0.1 (t)
Total. 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.6	April 10 6 6 6	0.2 .1 .1 b.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4 5.8 5.3 4.6 4.2	May 4 4 6 7	0.1	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4	June 7 3 3 4 7 5 3 4 4 6 8	0.1 (t)
1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4	April 10 6 6 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4 5.8	May 4 4 7 2	0.1 .1 .1 .1	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.2 2.0 1.4	June 7 3 3 4 7 5 3 4 4 3 4 6	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.0 4.4 4.2 6.1 7.6 7.3	April 10 6 6 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.6 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8	May 4 4 6 7	0.1	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4 1.3 1.0	7 3 3 4 7 5 3 4 4 4 6 8 7 7	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3	April 10 6 6 5 5 5 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0	May 4 4 7 2	0.1 .1 .1 .1	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.2 2.0 1.4 1.3 1.0 7	June 7 3 3 4 7 5 3 4 4 6 8 7	0.1 (t)
Total 1	9.0 9.0 8.3 7.3 6.7 5.6 5.6 5.6 5.6 4.4 4.2 6.1 7.6 7.3 7.6	April 10 6 6 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0	May 4 4 7 2 3	0.1 .1 .1 .1 (t)	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4 1.3 1.0 6	June 7 3 3 4 7 5 3 4 4 6 8 7 13 9	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0	April 10 6 6 5 5 5 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3	May 4 4 7 2	0.1 .1 .1 .1	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6	7 3 3 4 4 7 5 5 3 4 4 4 6 6 8 7 13 9 6	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0 7.0 6.4	April 10 6 6 5 5 5 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.9 2.6 2.3 2.1	May 4 4 7 2 3	0.1 .1 .1 .1 (t)	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.4 1.2 2.0 1.4 1.3 1.0 7.6 5.5	June 7 3 3 4 4 7 5 3 4 4 1 3 4 6 8 7 13 9 6 12	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0	April 10 6 6 6 5 5 5 6 6	0.2 .1 .1 .1 b.1 e.1 .1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3	May 4 4 7 2 3	0.1 .1 .1 .1 (t)	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6	7 3 3 4 4 7 5 5 3 4 4 4 6 6 8 7 13 9 6	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.4 4.2 6.1 7.6 7.3 7.0 7.0 6.4 6.1	April 10 6 6 5 5 5 6	0.2 .1 .1 b.1 e.1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0	May 4 4 6 7 2 3	0.1 .1 .1 .1 (t) (t)	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.5 1.6 5.5 .4	June 7 3 3 4 7 5 3 4 4 7 1 3 1 8 8 7 1 1 8 8 8 7	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0 7.0 6.4	April 10 6 6 6 5 5 5 6 6	0.2 .1 .1 .1 b.1 e.1 .1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0	May 4 4 7 2 3	0.1 .1 .1 .1 (t)	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.4 1.2 2.0 1.4 1.3 1.0 7.6 5.5	June 7 3 3 4 4 7 5 3 4 4 1 3 4 6 8 7 13 9 6 12	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.4 4.2 6.1 7.6 7.3 7.0 7.0 6.4 6.1	April 10 6 6 6 5 5 6 2 2	0.2 .1 .1 .1 b.1 .1 e.1 .1 (t)	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0	May 4 4 6 7 2 3	0.1 .1 .1 .1 (t) (t)	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.3 1.0 1.4 1.5 6.5 .5 .4	June 7 3 3 4 7 5 3 4 4 7 1 3 1 8 8 7 1 1 8 8 8 7	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.3 7.6 7.3 7.0 6.4 6.1	April 10 6 6 6 5 5 5 6 6	0.2 .1 .1 .1 b.1 e.1 .1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3 2.1 2.0	May 4 4 6 7 2 3	0.1 .1 .1 .1 (t) (t)	972.4 3.8 2.9 2.3 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4 1.3 1.0 1.5 .5 .4	June 7 3 3 4 7 5 3 4 4 4 6 8 7 13 9 6 12 8	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.6 4.8 4.4 4.2 6.1 7.3 7.6 7.3 7.0 7.0 6.4 6.1	April 10 6 6 6 5 5 6 2 2	0.2 .1 .1 .1 b.1 .1 e.1 .1 (t)	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.9 2.6 2.3 2.1 2.0	May 4 4 7 3 3 14	0.1 .1 .1 .1 (t) (t) .1	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.3 1.1 1.0 1.4 1.4 1.5 1.0 1.4 1.3 1.0 1.4 1.3 1.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	June 7 3 3 4 4 7 5 3 4 4 4 1 3 4 6 8 7 13 9 6 12 8	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0 6.4 6.1 6.7 7.6 8.8	April 10 6 6 7 7 8 8 8 8 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	0.2 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3 2.1 2.1 2.1	May 4 4 6 7 2 3	0.1 .1 .1 .1 (t) (t)	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6 .5 .4 .3	June 7 3 3 4 7 5 3 4 4 7 13 9 6 12 8 9 10 8 8	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.6 4.8 4.4 4.2 6.1 7.3 7.6 7.3 7.0 7.0 6.4 6.1	April 10 6 6 6 5 5 6 2 2	0.2 .1 .1 .1 b.1 .1 e.1 .1 (t)	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.9 2.6 2.3 2.1 2.0	May 4 4 7 3 3 14	0.1 .1 .1 .1 (t) (t) .1	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.4 1.3 1.1 1.0 1.4 1.4 1.5 1.0 1.4 1.3 1.0 1.4 1.3 1.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	June 7 3 3 4 4 7 5 3 4 4 4 1 3 4 6 8 7 13 9 6 12 8	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0 6.4 6.1 6.1 6.1 7.0 6.4 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	April 10 6 6 6 5 5 6 6 2 2 3 3 3 3 3 3 3 3 3 5 6 6 6 6 6 6 6 6 6 6	0.2 .1 .1 b.1 .1 e.1 .1 .1 (t)	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3 2.1 2.0	May 4 4 6 7 2 3 14 8	0.1 .1 .1 .1 (t) (t) .1 (t)	972.4 3.8 2.9 2.3 1.8 1.1 1.0 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6 .5 .5 .4 .3 3 .3	June 7 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 9 10 8 8 10	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.6 7.3 7.0 6.4 6.1 6.1	April 10 6 6 6 5 5 5 6 6 2 2 2 3 3 3 18	0.2 .1 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3 s.2.0	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0	May 4 4 6 7 2 3 14 8 39	0.1 .1 .1 .1 (t) (t) .1 (t) s.8	972.4 3.8 2.9 2.3 1.4 1.3 1.1 1.0 1.4 1.4 1.5 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.3 1.3 1.3 1.4 1.3 1.3 1.4 1.3 1.3 1.4 1.4 1.3 1.4 1.3 1.3 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.4 1.3 1.4 1.3 1.4 1.3 1.4 1.4 1.3 1.4 1.4 1.3 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	June 7 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 9 10 7	0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.3 7.0 6.4 6.1 7.3 7.0 6.4 6.1 7.6 8.8 19	April 10 6 6 6 5 5 6 6 2 2 3 3 3 3 3 3 3 3 3 5 6 6 6 6 6 6 6 6 6 6	0.2 .1 .1 b.1 .1 e.1 .1 .1 (t)	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0 1.6 1.5 1.4 1.8	May 4 4 6 7 2 3 14 8	0.1 .1 .1 .1 (t) (t) .1 (t)	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.3 1.0 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	June 7 3 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 9 10 8 8 10 7 17	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.3 7.0 6.4 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	April 10 6 6 6 5 5 5 6 6 2 2 3 3 3 18 11	0.2 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3 s2.0 .9 .5	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.2 3.8 2.6 2.3 2.1 2.0 1.6 1.5 1.4 1.8 6.6 2.7 2.0	May 4 4 6 7 2 3 5 14 8 39 10	0.1 .1 .1 .1 (t) (t) .1 (t) s.8 .1	972.4 3.8 2.9 2.3 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6 .5 .5 .4 .3 .3 .3 .4 .4 .3	June 7 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 10 7 17 13	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.0 4.8 4.4 4.2 6.1 7.3 7.6 7.3 7.0 6.4 6.7 7.6 8.8 19	April 10 6 6 6 5 5 5 6 6 2 2 2 3 3 3 18	0.2 .1 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3 s.2.0	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.9 2.6 2.3 2.1 2.0 1.6 1.5 1.4 1.8 6.6 2.7 2.0 7.2	May 4 4 6 7 2 3 14 8 39 10 71	0.1 .1 .1 .1 (t) (t) .1 (t) s.8 .1 s2.9	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.3 1.0 1.4 1.3 1.0 .7 .6 .5 .5 .4 .5 .4 .3 .3 .3 .3 .3	June 7 3 3 3 4 7 5 3 4 4 6 8 7 13 9 10 8 8 10 7 17 13 8	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.3 7.0 6.4 6.1 6.7 7.6 8.8 19	April 10 6 6 6 5 5 5 6 6 2 2 3 3 3 18 11	0.2 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3 s2.0 .9 .5	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3 2.1 2.0 1.5 1.4 1.8 6.5 2.7 2.0 2.7 2.0 2.7 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	May 4 4 6 7 2 3 14 8 39 10 71 23	0.1 .1 .1 .1 (t) (t) .1 (t) s.8 .1	972.4 3.8 2.9 2.3 1.4 1.3 1.1 1.0 1.4 1.4 1.2 2.0 1.4 1.3 1.0 .7 .6 .5 .5 .4 .3 .3 .3 .4 .4 .3	June 7 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 10 7 17 13	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.8 5.6 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.6 7.6 7.3 7.0 7.0 6.4 6.1 6.1 6.7 7.8 8.8 19	April 10 6 6 6 5 5 5 6 6 2 2 2 3 3 33 18 11 1 2	0.2 .1 .1 .1 b.1 e.1 .1 (t) (t) (t) .1 e.3 s 2.0 .9 .5 .1	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.8 3.0 2.6 2.3 2.1 2.0 1.6 1.4 1.8 6.6 2.7 2.7 2.4 6.4 2.7	May 4 4 6 7 2 3 5 14 8 39 10 71 23 10	0.1 .1 .1 .1 (t) (t) (t) .1 s.8 .1 s2.9 .3 .1	972.4 3.8 2.9 2.3 1.4 1.3 1.1 1.0 1.4 1.4 1.5 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.4 1.3 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	June 7 3 3 4 7 5 3 4 4 4 3 4 6 8 7 13 9 6 12 8 9 10 7 17 13 8 12	384.8 0.1 (t)
Total 1	9.0 8.3 7.3 6.7 5.6 5.6 5.0 4.8 4.4 4.2 6.1 7.3 7.0 6.4 6.1 6.7 7.6 8.8 19	April 10 6 6 6 5 5 5 6 6 2 2 3 3 3 18 11	0.2 .1 .1 b.1 e.1 .1 (t) (t) .1 c.3 s2.0 .9 .5	8.3 7.0 6.1 5.6 8.5 5.3 9.0 6.4 5.8 5.3 4.6 4.2 3.0 2.9 2.6 2.3 2.1 2.0 1.5 1.4 1.8 6.5 2.7 2.0 2.7 2.0 2.7 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	May 4 4 6 7 2 3 14 8 39 10 71 23	0.1 .1 .1 .1 (t) (t) .1 (t) s.8 .1 s2.9	972.4 3.8 2.9 2.3 1.8 1.4 1.3 1.1 1.0 1.4 1.4 1.3 1.0 1.4 1.3 1.0 .7 .6 .5 .5 .4 .5 .4 .3 .3 .3 .3 .3	June 7 3 3 3 4 7 5 3 4 4 6 8 7 13 9 10 8 8 10 7 17 13 8	0.1 (t)

e Estimated. s Computed by subdividing day. t Less than 0.05 ton.

a Computed from estimated concentration graph.
b Computed on basis of infrequent samples.
c Computed from partly estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

COREY CREEK NEAR MAINESBURG, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		July	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	der year or	August	o Boptombo	September			
1	16	Suspende	d sediment	Mean	Suspende	d sediment	1,7	Suspende	d sediment	
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	
1	0.2	10	(t)	0.1	9	(t)	7.0	4	0.1	
2	.2	4	(t)	.1	10	(t)	4.8		(t) (t)	
3	.1	3	(t)	.1	14	(t)	4.0		(t)	
5	.1 .1	2 2	(t)	.1 .1	15	(t)	3.4	N I	}	
3	. 1	z	(t)	.1	14	(t)	2.9	6	.1	
6	.1	3	(t)	.1	13	(t)	2.6	l)		
7	.2	7	(t) (t)	.1	17	(t)	2.1	h l		
8	. 2	5	(t)	.1	10	(t)	1.9	} 2	(t)	
9	.1	4	(t)	0		0	1.6	ן ע		
10	.1	5	(t)	0		0	1.5) !		
11	0		0	.1		(t)	3.1	} 4	(t)	
12	ŏ		ŏ	.2		(6)	3.2	IJ I		
13	ō		ō	90	204	s 66 `	2.0	ħΙ		
14]	0		0	30		c3.2	1.6	} 4	(t)	
15	0		0	11		c.2	1.5	1	***	
16	0		0	7.3		e.1	1.4	<u> </u>		
17	.2	3	(t)	4.6		e.1	1.3	4	(t)	
18	.1	. 9	(t)	31	78	s11	1.3	(- I	1 19	
19)	.4	9	(t) (t)	15	25	1.0	1.2	ħ!		
20	.2	8	(t)	8.7		c.2	1.1	} 6	(t)	
21	.1	10	(t)	16		c4.0	1.0	l) l	, ,	
22	0		l 'ő	22		c8.0	.9	h I		
23	Ō		0	17		c3.0	1.2	4	(t)	
24	.2	17	(t) (t)	9.7		c.5	2.9	ו ע		
25	.2	10	(t)	6.7		c .1	1.6) I		
26	.1	11	(1)	5.0	h '		1,2	} 4	(t)	
27	.i	24	(t) (t)	4.4	ll .] "]	1.1	ו ע		
28	.7	23	(t)	3.6	1	(t)	1.4	h l		
29	.3	9	(t)	2.9	h		1.3	4	(t)	
30	.2	8	(t) (t)	22	120	s 20	1.2	Į l		
31	1	7		15	50	2.0			0.8	
Total.	4.3		0.1	323.0		119.5	63.3		0.8	

Total discharge for year (cfs-days).

Total load for year (tons).

2,752.2 713.0

e Estimated.

Computed by subdividing day.
 t Less than 0.05 ton.
 Computed from partly estimated concentration graph.

COREY CREEK NEAR MAINESBURG, PA. --Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

	Methods of analysis		BWCM				
		1.000					
		0.500	100 97				
		0.350					
	Percent finer than indicated size, in millimeters	0.250	98				
	ize, in m	0.125	96 88				
	ndicated s	0.062	88				
Suspended sediment	ner than i	0.031	76 64				
	Percent fi	0.016	58 53				
		0.008	24 47 24 43				
		Percent finer than indicated size, in millimeters 0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.125 0.350 0.350 1.000					
		0.002					
	Concentration of suspension	1, 240 3, 200					
	tem- per- Concentration	of sample (ppm)	570 2, 500				
Water	tem-	ature (°F)					
	Discharge (cfs)		104 191				
	Time		2:00 p.m. 5:00 p.m.				
í	Date of collection						

ELK RUN NEAR MAINESBURG, PA.

LOCATION. --At gaging station, 2.7 miles northeast of Mainesburg, Tioga County, 5½ miles upstream from mouth, and 5.8 miles east of Mansfield.

DRAINAGE AREA.--10.2 square miles.

RECORDS AVAILABLE, --Sediment records: May 1954 to September 1955. EXTREMES, 1954-55.--Sediment concentrations: Maximum daily, 719 ppm, Mar. 22; minimum daily, no flow on many days. Sediment loads: Maxim

no Ilow on many days.

Sediment loads: Maximum daily, 294 tons Mar. 22; minimum daily, 0 tons or many days.

EXTREMES, May 1954-55.--Sediment concentrations: Maximum daily, 719 ppm Mar. 22, 1955; minimum daily, no flow on many days.

Sediment loads: Maximum daily, 294 tons Mar. 22, 1955; minimum daily, 0 tons on many days.

REMARKS.--Records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Station established May 1954 as an index station for Elk Creek Watershed Project and part of SCS Pilot Watershed Study of Corey Creek which is adjacent to Elk Creek. Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Suspended sediment, water year October 1954 to September 1955

		October			November		December			
		Suspended	l sediment		Suspende	d sediment	Mean	Suspended	d sediment	
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	N'ean concen- tration (ppm)	Tons per day	
1 2 3 4 5	0.4 .4 .3 .3	2	(t)	0.6 .7 1.4 2.7 3.2	2 2 3 10 2	(t) (t) (t) 0.1 (t)	3.8 3.4 2.3 2.4 2.5	8 4 1 1 46	0.1 (t) (t) (t) .3	
6 7 8 9 10	.3 .3 .3 .3	2	(t)	2.9 2.0 2.2 3.3 2.6	2 2 2	(t)	2.3 2.0 2.4 2.5 3.0	42 14 12 6	.3 .1 .1 (t)	
11 12 13 14 15	.4 .4 .5 .4 1.6	1 13	(t) s0.1	2.3 2.1 2.1 2.1 2.1	6	(t)	2.6 2.3 2.1 13 28	4 2 7 24 38	(t) (t) (t) s1.8 2.9	
16 17 18 19	4.5 2.1 1.3 1.6 1.1	6 2	(s t) (t)	2.0 1.8 2.1 1.8 2.1	6	.1	10 14 42 23 17	9 6 54 22 10	.2 .2 s9.6 1.4 s.7	
21 22 23 24 25	1.0 .7 .7 .7 .6	4	(t)	4.2 4.5 3.2 3.3 3.8	1	(t)	12 11 12 9.0 7.6	3 6 6 1 	.1 . s1.5 s.7 (t)	
26 27 28 29 30	.6 .6 .7 .6 .6	2	(t)	2.6 2.5 2.9 4.5 3.8	 1	(e t) 0 (t) 	6.6 6.8 16 29 133 47	 3 5 21 40 11	0 s.1 .2 s2.0 s16 1.4	
Total .	24.4		0.2	77.4		0.6	470.6		39.9	

e Estimated.

s Computed by subdividing day. t Below 0.05 ton.

ELK RUN NEAR MAINESBURG, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

Man charge Man			January		L	February		March		
Day Chief Chief		Mean		d sediment	Mean	Suspende	d sediment	Mean		d sediment
Charge Charge Cration Cap Charge Cration Cap	Day			Tons			Tons			Tons
				per	charge			charge		per
1.		(cfs)		day	(cfs)		day	(cfs)		day
2 35	1	28		s2.5	1.4	1		72		s 65
4 19 16 .8 1.4 1 (t) 85 30 311 s113 5 13 1- a.8 1.3 1 (t) 85 20 60 7 13 15 .5 2.2 2 27 20 1.5 8 10 8 .2 2.0 27 20 1.5 9 9.0 13 .3 1.7 22 28 8 .6 11 6.2 7 .1 4.2 2 22 28 8 .6 112 6.0 a.1 2.2 2 1 24 13 8.3 2.0 2.1 1 24 13 8.3 6 2.0 3 2.1 1 1.5 1 1.5 1 1.5 1 1.5 1 1.5 1 1.5 1 1.5 2.1 1 1.5 <td< td=""><td>2</td><td>35</td><td>15</td><td>1.4</td><td>1.3</td><td>} 10</td><td>(t)</td><td>38</td><td>30</td><td>3.1</td></td<>	2	35	15	1.4	1.3	} 10	(t)	38	30	3.1
5.	3			.2		J .	Ì			
6 21	5						(t)			
7.	•	**		4.5	1.3	1	(6)	65	200	"
8.						n .			110	
9.	7			.5						a1.6
10.	9									
11.	10		7	.2	1.8			25		2.0
12.			_					l		
13.	11					ŀ				
14.	13		h	a.1	2.0			28		
15 3.5	14	4.1	} 4	(t)	2.0	}	(t)			
17.	15	3.5	Į	, ,	2.3			21	8	.4
17.	16	9.9						95	45	045
18.	17	3.0	3	(t)	1.9					.4
20.	18	2.5	J		1.8	1				
21.	19)							
1.0	20	1.1	} 1	(t)	2.0	!		15	10	.4
1.0	21		Į l			J				s5.0
24 1.6 2 (t) 32 a.3 30 6 .5 25 1.5 1.6 14 (at) 20 1 .1 28 1.2 20 11 .6 13 1 (t) 28 1.4 4 (t) 12 1 (t) 30 1.5 3 1.5 1 (t) 11 1 (t) 30 1.5 3 1.1 4 (t) 11 1 (t) 30 1.5 3 .7 .9 210.8 19.1 1,048 61.6 61.6 61.6 <td>22</td> <td></td> <td>) </td> <td></td> <td></td> <td></td> <td>a1.5</td> <td></td> <td></td> <td>s 294</td>	22)				a1.5			s 294
25 1.5	24									
26 1.6 1.6 14 (a t) 20 1 .1 12 22 1.1 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	25		} 2	(t)			.1			
27					1					
28 1.2 4 (t)	26		Ų į				(at)			
1.4	28									
1.5	29		} 4	(t)						
Total 225.5 7.9 210.8 19.1 1,048 612.6	30							11		(t)
April	31 [1.4)	i	l 1			10		(1)
1 8.8 d 2 7.4 d 3 7.4 d 6.6 d 6.6 d 6.6 d 5 4 0.1 d 1.7 d 1.4 d (t) 4 0.1 d 1.7 d 1.4 d (t) 4 0.1 d 1.7 d 1.4 d (t) 4 0.1 d 1.2 d	Total	22E E		7.0	210.0		10 1	1 040		419 A
2	Total .	225.5		7.9	210.8		19.1	1,048		612.6
3				7.9	210.8		19.1	1,048	June	
4	1	8.8		7.9	8.8		19.1	1.7	June	
6 5.0 7 10 3.7 4 .1 2.8 7 1.5	1	8.8 7.4		7.9	8.8 7.4	May		1.7	June 5	(t)
7	1 2 3 4	8.8 7.4 7.4	April		8.8 7.4 6.6	May		1.7 1.4 1.2	June 5	(t)
7	1 2 3 4	8.8 7.4 7.4 6.6	April		8.8 7.4 6.6 5.0	May		1.7 1.4 1.2	June 5	(t)
8	1	8.8 7.4 7.4 6.6 5.7	April		8.8 7.4 6.6 5.0 6.6	May 4	0.1	1.7 1.4 1.2 .9	June 5	(t)
10 3.0	1	8.8 7.4 7.4 6.6 5.7	April		8.8 7.4 6.6 5.0 6.6	May 4	0.1	1.7 1.4 1.2 .9 .8	June 5 4	(t) (t)
11	1	8.8 7.4 7.4 6.6 5.7 5.0 5.0	April		8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1	May 4	0.1	1.7 1.4 1.2 .9 .8	June 5 4	(t) (t)
12	1	8.8 7.4 7.4 6.6 5.7 5.0 4.7 3.7	April 4	0.1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6	May 4	0.1	1.7 1.4 1.2 .9 .8 .6 .4	June 5 4	(t) (t)
12	1	8.8 7.4 7.4 6.6 5.7 5.0 4.7 3.7	April 4	0.1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6	May 4	0.1	1.7 1.4 1.2 .9 .8 .6 .4	June 5 4 4	(t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 2 3 4 5 6 7 8 9 10	8.8 7.4 7.4 6.6 5.7 5.0 4.7 3.7 3.0	April 4	0.1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3	May 4	0.1 (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4	(t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 7.4 6.6 5.7 5.0 4.7 3.0 4.7	April 4	0.1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3	May 4	0.1 (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4 2 3 3 3	(t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.7 3.0 4.7 6.4	April 4	0.1 (t)	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8	May 4	0.1 (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4 2 3 3 3	(t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 7.4 5.6 5.7 5.0 4.7 3.0 4.7 8.4 3.7	April 4	0.1 (t)	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3	May 4	0.1 (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4 2 3 3 3	(t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12345	8.8 7.4 6.6 5.7 5.0 4.7 3.0 4.7 6.4 3.7 6.6	April 4	0.1 (t)	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.8 2.3	May 4 2 3	0.1 (t)	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0	June 5 4 4 2 3 3 3 3 3	(t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.7 3.0 4.7 6.6 5.7	April 4	0.1 (t)	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.8 2.8 2.8 1.9	May 4 2 3	0.1 (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4 2 3 3 3 3 3	(t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 6.6 5.7 6.6	April 4	0.1 (t)	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.6 2.3 1.9	May 4 2 3	0.1 (t)	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0	June 5 4 2 3 3 3 3 3 3 3	(t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.7 6.6 5.7 6.1	April 4 2	0.1 (t) .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.8 2.3 1.9	May 4 2 3	(t) (t)	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0	June 5 4 2 3 3 3 3 3 3 3	(t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.7 6.6 5.7 6.1	April 4 2	0.1 (t) .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.8 2.3 1.9	May 4 2 3	(t) (t)	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0	June 5 4 2 3 3 3 3 3 3 3	(t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.7 6.4 3.7 6.4 5.7 6.1 5.7	April 4 2	0.1 (t) .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.3 1.9 1.7 1.5 1.5	May 4 2 3	(t) (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0	June 5 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	(t) (t) (t) (t) (t)
25 17	123455667891011121314151617181920212121212021212121212121222122	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.0 6.4 3.7 6.1 5.7 6.1 5.7	April 4 2 4 3 9	0.1 (t) .1 .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.3 1.9 1.7 1.5 1.4 1.2	May 4 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	(t) (t) (t) (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .9 .8 .8 .4 .4 .6 .9 .9 1.0	June 5 4 2 3 3 3 3 4 4 4 4	(t) (t) (t) (t) (t) (t) (t) (t)
26 17 20 .9 3.2 a.2 0 0 27 15 18 .7 1.3 (bt) 0 0 28 13	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 4.7 6.6 5.7 6.1 5.7 6.1 5.7	April 4 2 4 3 9	0.1 (t) .1 .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.6 2.3 1.9 1.7 1.5 1.2	May 4 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	(t) (t) (t) (t)	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .8 .4 .4 .2 .2	June 5 4 2 3 3 3 4 4 4	(t)
27 15 18 .7 1.3 (b1) 0 0 28 13	12345566789101112131415161718192021222324	8.8 7.4 6.6 5.7 5.0 5.0 4.7 3.7 3.0 4.7 6.4 3.7 6.4 5.7 6.1 5.7 6.1 5.7	April 4 3 9 4	0.1 (t) .1 .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.6 2.3 1.9 1.7 1.7 1.4 1.2	May 4 2 3 4 2 2	(t) (t) (t) (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .9 .8 .6 .4 .2 .2	June 5 4 2 3 3 4 4 4	(t)
28 13 29 11 3 6 .2 3.8 b.2 0 0 33 10 3.0 b.1 0 0 31 2.2 (bt)	12345667891011121314151617181920202022232425	8.8 7.4 6.6 5.7 5.0 5.0 4.7 3.7 3.0 3.7 6.4 3.7 6.4 3.7 6.6 5.7 6.1 5.7 6.1 5.7 6.1 5.7	April 4 4 3 9 19	0.1 (t) .1 .1	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.6 2.3 1.9 1.7 1.7 1.4 1.2	May 4 2 3 4 2 2	(t) (t) (t) (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .9 .8 .6 .4 .2 .2	June 5 4 2 3 3 4 4 4	(t)
29 11 6 .2 3.8 b.2 0 0 30 10 3 b.1 0 0 31 2.2 (bt) Total. 225.8 5.2 102.1 1.4 16.4 0.2	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.7 6.4 3.7 6.4 5.7 6.1 5.7 7.0 9.8 5.7	April 4 3 9 19 20	0.1 (t) .1 .1 .1 .1 .1 .1 .9	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.3 1.9 1.7 1.5 1.7 1.1 1.0 1.0	May 4 2 3 4 2 4 4 4	(t) (t) (t) (t) (t) (t) (t) (t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .4 .4 .4 .2 .2	June 5 4 3 3 3 -4 4	(t)
30 10 3.0 b.1 0 0 31 2.2 (b.t) Total. 225.8 5.2 102.1 1.4 16.4 0.2	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 6.6 5.7 6.1 5.7 6.1 5.7 6.1 5.7 6.1 5.7	April 4 3 9 19 20	0.1 (t) .1 .1 .1 .1 .1 .1 .9	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 3.3 2.8 2.8 2.3 1.9 1.7 1.5 1.2 1.1 1.0 1.0 1.9 1.9	May 4 2 3 4 4 2 4	(t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .4 .4 .4 .2 .2	June 5 4 2 3 3 3 4 4	(t)
Total. 225.8 5.2 102.1 1.4 16.4 0.2	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.0 6.4 3.7 6.1 5.7 6.1 5.7 7.0 8 5.7 9.8 5.7 9.3	April 4 4 9 19 20 18	0.1 (t) .1 .1 .1 .1 s1.0 .9 .7	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.3 1.9 1.7 1.5 1.4 1.2 1.0 1.0 1.0 9.3 2.1 3.2	May 4 2 3 4 4 2 4	(t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .4 .4 .4 .2 .2	June 5 4 2 3 3 3 4 4	(t)
	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 4.7 6.6 5.7 6.1 5.7 6.1 5.7 7.0 9.8 5.7 9.3 17	April 4 4 9 19 20 18	0.1 (t) .1 .1 .1 .1 s1.0 .9 .7	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.6 2.3 1.9 1.7 1.5 1.4 1.2 1.0 1.0 9.9 3.2 1.3 1.3 1.3 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	May 4 2 3 4 2 4	(t) (t) (t) (t) (t) (t) (t) (t) (b, t) (b, t) b, 2 b, 1	1.7 1.4 1.2 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .6 .4 .4 .2 .2 .1 .1 0 0 0	June 5 4 2 3 3 3 4 4	(t)
	1	8.8 7.4 6.6 5.7 5.0 4.7 3.0 3.0 4.7 3.7 6.4 5.7 6.1 5.7 7.0 9.8 5.7 9.3 17	April 4 3 9 19 20 18 6	0.1 (t) .1 .1 .1 .1 .1 .1 .1 .2	8.8 7.4 6.6 5.0 6.6 4.0 3.7 9.1 6.6 4.3 2.8 2.3 1.9 1.7 1.5 1.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	May 4 2 3 4 2 4	0.1 (t) (t) (t) (t) (t) (t) (a.2 (b t) (b t) (b t) (b t) (b t)	1.7 1.4 1.2 .9 .8 .6 .4 .6 .9 1.0 .9 1.5 .8 .8 .4 .4 .4 .2 .2 .2	June 5 4 2 3 3 3 4 4	(t)

S Computed by subdividing day.
t Below 0.05 ton.
a Computed from water-sediment discharge curve.
b Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

ELK RUN NEAR MAINESBURG, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		July			August			September	
	Mean		sediment	Mean	Suspende	d sediment	Man	Suspende	d sedimen
Day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	d'a- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	0		0	0		0	6 6	7	0.1
2	0		0	1.1	50	8.2	4.6	7	.1
3	0		0	.6	13	(t)	4.6	8	.1
5	0		0	.4	11	(t)	3.5		a.i
3	υ		0	.2	5	(t)	2.7	12	.1
6,,,,,	0		0	0		0	1.8	h	1
7	0		0	.1	6	(t)	1.4	}}	}
8	0		0	0		0	1.0	 } 2	(t)
9	0		0	0		0	9.	II.	1
10	0		0	0		0	.3	P	ĺ
11	0		0	0		0	1.8		(bt)
12	Ö		ŏ	.2	13	(t)	3.4		b.1
13	0		0	84	56	s13	1.1		(b t)
14	D		0	50	19	s3.0	.7		(bt)
15	0		0	15	13	.5	.7		(b t)
16	0		0	11	8	.2	.7	h	
17	0		ŏ	7.3	8	.2	.6	{ }	{
18	0		Ö	25	20	s1.6	.6 .5	5	(t)
19	0	l I	0	15	7	.3	.4	11	
20	0		0	9.0	3	.1	.4	p	•
21	0		0	10	4	.1	.3	.	
22	0		ŏ	1 12	4	.î	.3	1	1
23	0		0 1	11	3	.1	.7	} 2	(t)
24	0		0	7.3		a.1	2.0	1	} '"
25	0		0	5.9	2	(t)	1.1	V	{
26,	0		o	5.3	3	(t)	.7	h	
27	.4	29	s.1	4.6	7	.1	.6		
28	.8	17	(t)	2.0	9	.1	1.5	3	(t)
29	. 2	3	(t)	1.4	10	(t)	.7	} {	1 ''
30	0		0	26	11	s1.5	.6	y	
31	0		0	17	8	s .4			
Total .	1.4		0.1	321.4		21.8	46.5		0.9

709.9

Total discharge for year (cfs-days)
Total load for year (tons).

s Computed by subdividing day.
t Below 0.05 ton.
a Computed from water-sediment discharge curve.
b Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA.

LOCATION.--At gaging station at highway bridge at Newport, Perry County, 1,000 feet upstream from Little Buffalo Creek.
DRAINAGE AREA.--3,354 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to June 1953.
Water temperatures: October 1944 to June 1953.
Sediment records: January 1951 to September 1955.
EXTREMES, 1954-55.--Sediment concentrations: Maximum daily, 536 ppm Oct. 16; minimum daily, 1 ppm on several days.
Sediment loads: Maximum daily, 52,600 tons Oct. 17; minimum daily, 2 tons many days during July and September.
EXTREMES, 1951-55.--Sediment concentrations: Maximum daily, 1,130 ppm Mar. 2, 1954; minimum daily, 0 ppm several days.
Sediment loads: Maximum daily, 128,000 tons Mar. 2, 1954; minimum daily, 0 tons several days.

days.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1382. Flow affected by ice December 7-8, 22-23, January 16 to February 14.

Suspended sediment, water year October 1954 to September 1955

							December				
		October		ļ	November				3 35 3		
	Mean		d sediment	Mean		d sediment	Mean		d sediment		
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons		
- 1	charge	concen-	per	charge	concen-	per	charge	concen-	per		
	(cfs)	tration	day	(cfs)	tration	day	(cts)	tration	day		
		(ppm)			(ppm)			(ppm)	L		
1	580	n '	1	2,050	4	22	4,480	15	181		
2	648			2, 330	4	25	4, 110	10	111		
3	635	} 2	3	2,500	10	68	3,990	9	97		
4	635	{}		3,280	17	151	3,750	8	81		
5	537	P		3,630	15	147	3,510	10	95		
6	830			3,510	22	208	3,040	10	82		
7	1,090	ll i		3,040	14	115	2,600	10	70		
8	2,060	5	21	2,930	13	103	2,300	9	56		
9	2,080	1	•	2,520	h - 1	100	2,160	10	58		
10	1,780]		2,390	ll .		2, 440	12	79		
	-,	ľ			12	71	_,				
11	1,170	h i		2,110	12	l '' l	2,520	14	95		
12	1,040	li i	l	2,130	1		2,330	10	63		
13	835	} 4	11	1,870	[]		2, 200	12	71		
14	858			1,950	ħ ∣		2, 260	5	31		
15	1,070	V .		1,810	} 10	48	5,760	81	s1,310		
16	20,800	536	s 42, 400	1,610			10,900	101	s 3, 030		
17	40, 400	470	s 52, 600	1,760	ĸ	1	9,600	25	648		
18	17,800	250	12,000	1,680	} 6	26	8,020	25	541		
19	8,190	125	2,760	1,460	1		11,900	48	1,540		
20	5,670	50	765	1,910	23	119	11,900	32	1,030		
.											
21	4,480	35	423	4,650	185	sa 1,000	8,640	17	397		
22	3,630	25	245	8,960	125	sa 3, 000	6, 200	22	368		
23	3,160	25	213	8,640	65	1,520	5, 200	15	211		
24	2,590			6,520	35	616	4,870	17	224		
25	2,330			5,400	24	350	4,740	10	128		
26	2,050	8	47	4,740	17	218	4, 240	10	114		
27	1,990	11 '	1	4,240	h -		3,750	8	81		
28	1,870	ll l	1	3,870	} 6	64	3,630	2	20		
29	1,720	4	19	3,750	U I		3, 630	3	29		
30	1,720	2	9	4,360	23	271	8,780	63	s1,990		
31	1,910	5	26				22,000	172	s10,400		
Total.	136, 158		111,870	101,600	•	8,702	175, 450	-	23, 231		

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA.--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued January February March Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Mean Day disdisdis-Tons Tons Tons concenconcen concen charge charge charge per day per per da v tration tration tration (cfs) (cfs) day (cfs) (ppm) (ppm) (ppm) s 1, 760 1. 20,600 94 5, 230 7,140 78 1,200 2. 14,300 83 3, 200 1,500 15, 100 181 s7,570 11 10,900 3. 46 350 1,300 15,600 154 s 6, 550 4. 8,960 7,560 605 12,900 70 2.440 25 1, 250 5. 20 408 17,400 133 s 6,600 1,100 4 14 6. 6,810 18 331 1,050 26,900 206 s 14,900 6,660 6,090 5,260 s12,500 3,100 1,220 24 432 1,800 23,500 195 16,400 11,900 70 8. 19 312 4,200 15 170 9. 15 213 5,400 5,300 38 10.... 131 67 30 11.... 817 35 787 4.610 q 112 5,500 55 8.330 4, 360 8, 330 900 12. 🕳 . . . 5, 200 10 118 18 253 40 4,400 8,020 7,410 1,080 13. 4,110 10 30 50 111 900 14. 3,870 146 33 15. 3,750 172 3, 160 30 256 6,520 32 563 16..... 3,100 117 3.160 22 188 6,090 30 493 3,000 10 81 3,160 3,870 20 6,380 5,950 637 17. 171 18. 2,700 33 35 562 19. 1,800 8 44 3,510 27 256 5,670 28 429 20.... 1,600 3,750 27 273 5,400 19 277 21..... 1,500 4.240 20 229 5,870 18 285 18,100 32,900 181 22..... 1,500 8 33 4,870 23 302 s 10, 700 23. 1,600 6,040 48 s 822 255 s 22, 500 26,900 9.300 24.... 2,000 128 10,500 156 s 4,500 25. 2, 100 10,000 70 3, 250 s 3, 150 17, 200 114 8 41 26..... 1,390 1,600 8,020 40 866 12,900 40 10,600 1,030 27. 1,500 6,520 25 440 36 1, 250 8,370 7,160 35 791 28. 383 4 14 5,670 25 29..... 1,150 22 425 --30. 6,300 15 255 31..... 1,100 5,740 10 155 Total. 141,310 15, 688 376,640 119, 170 114, 131 --13, 492 --April May June 1..... 7,760 24 503 1,320 2. 4,810 8 105 22 391 1,260 2 7 3. 4,550 4,300 1,170 1,170 5,880 20 318 4..... 5,200 20 281 5. 3,800 1,320 4.680 18 6 63 4, 300 3,550 931 2 6 3,800 3,020 2,540 7. 4,040 8 86 830 3,670 1,090 6 51 8. 9. 3, 430 3, 310 2,440 59 10. 2,510 35 394 53 ß 6 43 2,740 2,720 3,440 4,170 450 11. 3,070 40 12..... 4, 170 4, 170 31 349 2,950 2,860 13. s 180 3 23 28 315 18 4,420 14. s 443 34R 4,680 35 2,810 29 15. 4.680 22 278 2,560 4, 420 36 430 2 12 4.940 400 2,060 3,920 32 339 30 17. 4,940 4,940 3, 310 25 333 2, 280 20 18. 22 293 2,190 2,880 20 19. 4, 680 20 253 2,040 2 11 2,400 15 97 20. 4 550 18 221 1,930 2,080 6 30 21. 5,470 30 443 1,760 1.930 22. 12,300 s 6, 920 1,550 170 1,910 23. 22,800 250 s 15, 600 1,720 1,780 2 9 1,450 24..... 17,500 105 4,960 1.390 25. 12,900 85 2,960 1,570 1.320 4 14 26. 1,170 13,800 52 1,940 1,690 27. 15,500 52 2, 180 1,610 1,120 **b6** 28. 1,490 1,100 8 1,140 1,060 13,800 40 1,650 2 29. 11,600 35 1,350 2 30. 9,310 1,430 1,060 31. Total . 215, 370 41.408 2,364 64,831 3,336

s Computed by subdividing day.

b Computed from estimated concentration graph.

JUNIATA RIVER AT NEWPORT, PA .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

July August Sept September Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Mean Day dis-Tons dis-Tons dis-Tons concen concenconcencharge charge charge per day per day per day tration tration tration (cfs) (cfs) (cfs) (ppm) (ppm) (ppm) 1,040 1,070 1..... 591 1,970 20 106 6 2 2,280 1,430 1,170 2..... 569 536 18 111 2 3 3. 993 4.... 558 916 5. 830 569 1,090 1 2 2 6 6. 830 547 2 3 1,070 7. 844 1,170 1,040 978 635 8. 2 6 832 9. 1,210 1,740 900 558 10.... 5 23 2 3 931 648 1 2 11. 1,820 5 25 660 2 226 12..... 1,140 980 4,720 9,630 5 13 830 1,320 13. 1 4 135 s 2, 920 s 6, 080 802 1, 470 905 14..... 231 710 15. 6,580 100 1,780 900 2 1 1 2 886 3,800 34 349 802 2,900 3,550 17..... 10 78 760 s 176 18. 802 710 19..... 748 1 2 10,600 124 s 3, 580 698 20. 722 1,310 8,680 56 648 1 2 21..... 869 6,870 50 927 648 748 22. 246 50 806 4, 550 20 1 2 23..... 613 3,670 3,090 5 624 33 774 24..... 4 2 25. 648 15 946 2,840 2 6 2,380 1,720 1,470 1,350 1,060 1,320 26. 547 580 1 2 2 2 13 27. 9 28. 735 2 2 8 1,120 29. 722 1,020 2 6 30..... 591 1 2 1,300 1,010 31. 602 020 28,643 Total . 136 89, 403 17,648 29,875 321 Total discharge for year (cfs-days). 1, 569, 970
Total load for year (tons). 352, 327
Committed by cabilitying day.

s Computed by subdividing day.

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA. -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decanistion: p. pipeties; S. sever; N. in native water; C. chemically dispersed; M. mechanically dispersed; M. in distilled water; C. chemically dispersed; M. mechanically dispersed:

	Methods of analysis		BWCM	BWCM	BWCM	BWCM	BWCM	BWCM	BWCM	BWCM	SBWCM	
			1,000					100				
			0.500	100	:	;	;	96	:	100	100	S
		0.350										
		limeters	0.250	66	100	100	001	94	100	94	97	96
		Percent finer than indicated size, in millimeters	0.125	97	66	66	92	92	86	06	83	93
		ndicated s	0.062	97	97	94	92	98	92	87	98	88
	sediment	ner than i	0.031	94	96	25	88	92	88	8	8	8.1
THE CHIEF THE	Suspended sediment	Percent fi	0.016 0	98	80	88	80	92	19	2	99	81
	Ŕ		0.008	84	75	83	99	25	64	55	43	54
mers) entober			0.004	37	51	28	62	8	44	30	20	40
, cure marc			0.002									
", " - " - " - " - " - " - " - " - " - "		Concentration of suspension	analyzed (ppm)	210	394	189	257	188	129	261	255	164
		Concentration	or sample (ppm)	165	155	225	165	145	120	140	182	154
	Water	tem- per-	ature (°F)									
	Discharge (cfs)			11,900	12,600	22,400	9,900	11, 200	13, 200	16,000	17, 400	11,600
		Time		6:00 p.m.	7:00 p.m.	9:00 a.m.	8:00 a.m.	12:45 p.m.	6:00 a.m.	11:45 a.m.	3:30 p.m.	7:30 a.m.
	Date of collection			Dec. 30, 1954 6:00 p.m.	Dec. 30	Dec. 31	Feb. 24, 1955		Mar. 2	Mar. 2	Mar. 2	Aug. 19

SUSQUEHANNA RIVER BASIN -- Continued

BIXLER RUN NEAR LOYSVILLE, PA.

LOCATION. --At bridge on Pennsylvania Highway 850, 400 feet downstream from gaging station, 3.6 miles west of Loysville, Perry County, and 2.3 miles upstream from mouth.

DRAINAGE AREA. --15.0 square miles.

RECORDS AVAILABLE. --Sediment records: February 1954 to September 1955.

EXTREMES, 1954-55. --Sediment concentrations: Maximum daily, 459 ppm Aug. 11.

Sediment loads: Maximum daily, 449 tons Aug. 13; minimum daily, less than 0.05 tons on many days.

EXTREMES, February 1954 to September 1955. --Sediment concentrations: Maximum daily, 986 ppm June 10, 1954; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 449 tons Aug. 13, 1955; minimum daily, less than 0.05 ton on many days.

ton on many days.

REMARKS.--Records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Station established February 1954 as an index station for the Bixler Run Watershed Project. Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Suspended sediment, water year October 1954 to September 1955

		Suspi	enaea seaim	ent, water y	ear October	1954 to Sept	ember 1955		
		October			November			December	
		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	3, 9 4, 0 4, 2 4, 1 4, 4	}	b0.1	5.4 7.7 19 18 14	 13 5	a0.1 a.3 a1.6 .6	9. 2 9. 2 8. 4 7. 2 7. 2		0.1 b.1
6 7 8 9	7.5 4.4 4.1 4.1 4.1	15	.3	10 8, 4 7, 6 6, 7 6, 2	3	.1 a.1	6. 4 5. 7 5. 7 7. 2 7. 6	4	.1
11	4, 0 4, 0 4, 0 4, 0 70	112	(bt) s48	5.7 5.7 5.6 5.6 5.6		(b t)	6.7 6.2 6.2 42 36	101	b.1 s9.7 s1.1
16 17 18 19 20	36 13 8.4 6.7 5.7	66 15 10 9	s 9.3 .5 .2 .2	5.4 5.6 5.6 5.9 21	5 46	.1 a.1 s3.3	24 18 46 34 25	7 8 25 7 5	.5 .4 s4.0 .6 .3
21 22 23 24 25	5.4 5.0 4.9 4.8 4.8		b.1	12 8.4 7.2 7.6 10		.3 b.1	18 15 16 16 13	=======================================	a.3 a.1 a.2
26 27 28 29 30	4.8 4.9 4.8 7.2 6.4 5.6	9 26 	.1 s.5 a.2 a.1	7.2 6.7 6.9 17 10	5 	a1.3 .1 	11 11 12 30 101 45	33 69 17	5.7 s22 2.1
Total .	259.2		61.2	267.7		8.9	605.9		48.8

s Computed by subdividing day. t Less than 0,05 ton.

a Computed from estimated concentration graph.

b Computed on the basis of infrequent samples.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

BIXLER RUN NEAR LOYSVILLE, PA. -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

Day			January]	February		I	March	
Day Clistory Class Cla		Mean		d sediment	Moon		d sediment	Moon		d sediment
Charge (ration)	Day	dis-		Tons	dis-		Tons			Tons
1.				per	charge			charge		per
2.					<u> </u>	(ppm)	day	L	(ppm)	
3.	1			0.5	7.3)				
4. 233	3			. 3	6.4		ьо. 1			
6. 233 144 a2.0 553 18 2.6 7. 198 668 169 s42 0 al.1 32 9 8 10. 16 17 15 .7 27 10 .8 11. 155 22 121 eig 29 25 2.0 13. 144 155 a.6 22 5 3.3 15. 13 144 155 a.6 22 5 3.3 15. 13 144 a.4 20 5 3.3 15. 13 144 a.4 220 5 3.3 15. 13 144 a.4 220 5 3.3 15. 13 14 15 17 10 18 10 10 10 10 14 19	4	23	3	.2	6.0	ſ		49	57	s 8. 0
7.	5	21	[[6.0	,	((50	20	2.7
7.	6	23	} }	ł	14		a2.0	53	18	2.6
17	7	19			68		s 42	40		a 1. 1
10.	8		ll i	Ì						. 8
11.	9		[]				.3			.8
12.	10	10	{{	1	1 1	13	' '		10	.0
12.	11			}						
14	12]	}]			a.8			.7
15.	13		l i				a.6			
16.	15		[[a.4			
17	ì		{		ł					
18.	16		ا ۔۔ ا	b.1		20				
10	18	9.2	<u> </u>			h 20	54.1			
21 7.6	19)	10	{{	1	18	}	b1	19	8	
22 9.9	20	8, 8	[[i i	18	7		18		a.4
22 9.9	21	7.6			17	10	.5	46	79	s 13
23 9.5 40 121 s18 94 98 s25 24 8.4 25 112 518 94 60 7.1 25 7.6 222 5 3.3 44 60 7.1 26 8.4 20 5 3 41 40 4.4 27 6.8 19 4 2 32 26 2.2 28 6.4 21 110 6 27 a.8 29 6.9 23 a.3 31 5.6 2 (t) 21 a.3 Total. 429.0 4.4 532.0 94.2 1,192 194.7 April	22	9.9)]	22	20	1.2	167	199	91
25 7.6	23		1							
26 6. 8 4 27 6. 8 4 27 6. 8 4 27 6. 8 4 27 6. 8 29 6. 9 19 4 2.2 32 26 2.2 28 6. 9 2	25		 							
27 6. 8 6. 4 22 11 10 6 6 27 a. 8 28 6. 9 6. 9 30 5. 6 2 (t) 25 a. 5 30 5. 6 2 (t) 25 a. 3 31 5. 6 2 (t) 21 a. 3 Total. 429.0 4. 4 552.0 94.2 1,192 194.7			()		1		1	ĺ	[
26.	26		}}	1						4.4
29	27]]	,						
30	29	6.9	[]					25		a.5
Total. 429.0 4.4 532.0 94.2 1,192 194.7 L 20 a0.3 17 May June 1 20 a0.3 17 4.8 (b t) 3 18 5 .3 16 4.8 (b t) 3 18 4.6 4.6 4.6 4.3 (b t) 5 16 b.2 12 4.3 (t) 7 15 11 4.6 75 sc 5.6 8 14 4.1 4.6 75 sc 5.6 sc 5.6 9 13 10 1 16 75 sc 5.6 sc 5.6 9 13 10 b0.1 18 55 2.9 12 12 5 2 10 b0.1 18 55 2.9	30	6, 9	١ . ١	[_m [
April										
1	Total.	429, 0		4,4	532.0		94, 2	1,192		194.7
2		90	April			May			June	
3			5)				(h t)
4	3		h						}	(5 ()
8	4		{ {						2	(t)
7. 15 8. 14 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 13 14 14 15 15 12 15 8.4 11	5	16			13			4.3		
7	6	16	}	h 2	12			4.3		(t)
9	7]		lj .			ļ				
10			l) i	l						
11 12			V I	[[
12	į.		_			L	bn 1	1		
13	11,		5	. 2		(-0.1		55	2. 9
14	13		}	ъ.3		}				
16 14 17 13 18 12 19 12 20 13 21 24 23 24 23 26 19 1.3 21 24 24 23 23 26 19 1.3 24 23 25 26 10 1.5 26 26 27 22 29 6 5.3 28 21 29 20 30 18 4 2 6.9 6.9 6.9 5.6 5.6 5.1 5.1 5.1 5.2 6.3 4.8 4.8 4.8 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3 6.5 7.4 4.6 4.6 4.6 </td <th>14</th> <td>15</td> <td>ו ט</td> <td> </td> <td>9.1</td> <td></td> <td> </td> <td>11</td> <td> </td> <td>b.1</td>	14	15	ו ט		9.1			11		b.1
17 13	15	16	12	.5	8.4			8.8)	
17 13	16	14	n I	l l	8.0			6.9		
19 12 20 13	17 }	13	}	h.2	7.6	1		6.3	1	
20	18				6.9				}	
21 24 43 83.4 6.3 2 (t) 5.1 22 35 46 85.2 8.3 2 (t) 5.1 23 26 19 1.3 6.9 4.8 4.8 24 23 a.9 6.6 4.8 4.8 25 26 16 1.1 5.9 (bt) 5.1 27 22 9 6 5 5.3 28 21 8 5.5 3 28 20 5 3.3 7.4 30 18 4 2 6.3 31 5.3 5.3 21 5.3 21 5.3 2.5 225.9 12.5			10	.4	6.9			5.3		
22 35 46 s5.2 8.3			[ľ						
23 26 19 1.3 6.9 4.6 25 26 16 1.1 5.9 (bt) 26 26 10 .7 5.6 27 22 9 .6 5.3 5.3 5.3 28 21 8 5.5 5.3 29 20 5 .3 7.4 4.6 30 18 4 .2 6.3 31 5.3 21 5.3 21 5.3 21 5.3 21	21					2	(t)	5.1	1	
24	23			1.3		1			l	(h t)
25 26 16 1.1 5.9 4.8 26 26 10 .7 5.6 27 22 9 .6 5.3 28 21 8 .5 5.3 29 20 5 .3 7.4 30 18 4 .2 6.3 31 5.3 Total 536 19.8 278.6 2.5 225.9 12.5	24	23		a.9)		4.8	ا ۲	(5)
27		26	16					4.8		
27	26.	26	10	, , (5.6	ا ا	(h.t)	5.1	(
28 21 8 .5 5.3 5.3 5.3 4.6 3.0 18 4 .2 6.3 4.6 3.1 5.3 4.6 3.1 5.3 5.3 5.3 4.6 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3	27 [22	9	.6	5.3		(0 1)	5.3	1	
29 20 5 .3 7.4 4.6 30 18 4 .2 6.3 4.6 31 5.3 536 19.8 278.6 2.5 225.9 12.5	28)				5.3			5.3		
31 5.3 Total. 536 19.8 278.6 2.5 225.9 12.5	29							4.6)	
Total. 536 19.8 278.6 2.5 225.9 12.5	31				5.3)				
				10.0			9.5	995.0		
	Total.	536		19.8	278.6		4.0	220.9		12.5

s Computed by subdivioung day.

t Less than 0.05 ton,
a Computed from estimated concentration graph,
b Computed on the basis of infrequent samples,
c Computed from partly estimated concentration graph,

SUSQUEHANNA RIVER BASIN--Continued

BIXLER RUN NEAR LOYSVILLE, PA .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

			seument,	Water year C		со зерсешье	r 1955CON		
		July			August			September	
	Mean	<u> </u>	d sediment	Mean	Suspende	d sediment	Mean	Suspende	d sediment
Day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	4.8		e0.3	3.5			11	10	0, 3
2 3 4 5	4.6 4.3 4.1 4.1	28	.3	3.3 3.3 3.3 3.3	}	(b t)	9.5 9.5 9.1 8.8	}	ъ,1
6 7 8 9	4.1 4.1 4.3 5.9 4.3	46	b.3 s.9	9.6 7.2 14 4.1 3.9	218 165 216 25 12	s14 s3.7 s12 .3 .1	8.0 7.6 6.9 6.9 6.9		
11 12 13 14	4.1 3.7 3.7 3.7 3.9		b.2	13 7.3 325 52 26	459 175 336 33 10	s27 s3.2 s449 5.7	6.9 6.9 6.3 6.3 6.3		(b t)
16 17 18 19	3.9 3.7 3.7 3.5 3.5	2	(t)	18 16 161 103 41	10 157 77 40	.5 (a t) s104 s28 4.4	6.3 6.3 6.3 6.3 5.9		
21 22 23 24 25	3.5 3.5 3.5 4.7 7.4	78 359	sc 1.6 s10	29 23 21 17 15	40 50	3.1 a 3.1 2.8	5, 3 5, 6 6, 6 16 8, 0	156	s.8
26 27 28 29	3.9 3.7 3.7 3.7 3.9		(b t)	14 13 11 11 15	117	b.6 sc 8.5	7.0 6.6 9.0 7.4 8.0		b.1
31	3.7			14	81	s3.6			
Total.	127.2		16.5	1,000.8		677.4	227.5		3.0

 Total discharge for year (cfs-days)
 5,681.8

 Total load for year (tons)
 1,143.3

Potal road for year (who)

E Estimated.

S Computed by subdividing day.

Less than 0.05 ton.

A Computed from estimated concentration graph.

Computed on the basis of infrequent samples.

C Computed from partly estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

SHERMAN CREEK AT SHERMANDALE, PA

LOCATION.--Temperature recorder at gaging station at highway bridge on State Highway 34 at Shermandale, Perry County, 14 miles upstream from Fishing

June 1953 to September 1955. Maximum, 89°F July 17, Aug. 2; minimum, freezing point on many days during December, January and February. Maximum, 89F Sept. 2, 1953, July 31, 1954, July 17, Aug. 2, 1955; minimum, freezing point on many days during DRAINAGE AREA.--200 square miles.

RECRORO ANALIABLE.-#ater temperatures: June 1953 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 89°F July 17, Aug. 2; minimum, freezing point EXTREMES, 1954-55. Water temperatures: Maximum, 89°F Sept. 2, 1953, July 31, 1954, July 17, Au wilter months each year.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Temperature (°F) of water, water year October 1954 to September 1955 for with temperature attachment continuous ethat alread-behalf thermoį

	1 1																																1	
	nber	min	69	99	67	67	69	7.1	7.1	67	63	63	65	99	62	9	62	65	67	68	89	F. 9	64	7 .	7 0	. 0	3	28	28	8	61	63	:	64
	September	max	7.2	73	69	73	92	11	18	7	99	69	73	23	2	69	74	16	11	92	7.	E	4.	2 5	25	. 7	5	64	62	8	88	63	-	20
	ıst	min	14	92	16	22	92	42	7.7	22	11	2	44	2	99	65	69	20	72	69	67	67	89	8 9	2 6		5	99	67	89	2	22	7.2	7.1
	August	max	88	88	98	82	87	84	82	82	8	18	48	15	20	20	14	7.5	15	7.4	2 2	27	73	4	* 6		2	12	23	16	16	42	74	77
	у	mim	7.2	7	23	74	94	15	73	7.	14	16	77	74	12	22	15	78	16	77	22	14	13	2	4 E	: }	_	12	7.	E	16	4	7	74
	July	max	4.8	81	98	88	88	85	82	43	83	98	85	82	83	82	82	88	88	86	88	84	88	8	8 8	5 6	8	98	84	82	8	8	82	82
	e	min	62	62	19	63	92	67	89	20	57	24	61	9	9	29	28	64	2.9	2	2 2	69	72	2	2 6		9	64	64	65	67	69	1	65
æ	June	max	89	67	73	7.4	48	81	7.5	89	28	49	64	64	61	61	67	73	77	48	92	48	48	8	2 2		2	70	74	11	43	48	:	72
Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph/	j.	nim	25	24	28	28	63	62	28	62	28	24	26	24	9	28	22	29	61	28	29	28	62	65	9 6		2	67	69	67	6	89	8	62
ted ther	May	max	49	64	62	99	69	67	65	67	64	62	63	67	64	65	67	69	89	49	62	89	12	99	21		9	77	48	11	4	12	6	88
l-actua	11	min	46	47	49	48	49	20	46	43	46	20	53	25	20	20	20	25	22	22	28	24	22	2	* :	66	70	21	20	49	54	26	:	21
l alcoh	April	max	21	53	54	53	53	25	21	48	54	28	28	28	25	21	54	9	28	29	63	63	24	28	9 2	, L	ĉ	25	21	28	29	61	:	26
us ethy	rch	min	41	4	33	41	42	39	36	34	36	41	46	46	45	44	44	4	41	4	\$:	40	£3	7	2 9	÷ ;	2	41	37	88	3	38	7	4
continuo	March	max	4	43	42	44	44	42	40	37	43	46	48	49	49	48	46	46	45	44	45	45	45	£3	4.	£ :	ç	45	4	40	41	45	48	44
hment,	ary	min	8	33	33	33	83	33	32	32	33	32	33	33	33	8	33	33	32	32	32	23	33	32	8		ř	34	38	38	;	;	:	33
re attac	February	max	33	88	33	33	33	88	33	33	33	35	35	33	33	33	33	33	34	34	32	98	35	35	5	ž į	š	36	38	41	;	;	:	35
nperato	ary	mim	37	88	38	39	38	38	36	34	\$	34	34	33	33	32	32	32	32	32	32	32	33	22	22.0	× 6	25	32	32	32	32	32	33	34
with ter	January	max	88	41	40	41	40	67	88	35	35	36	36	34	34	33	33	35	33	32	89	es S	32	32	22	2 2	22	32	33	32	32	33	33	35
corder	nber	min	8	88	22	35	35	25	8	33	33	33	34	34	34	35	3	37	36	36	37	34	33	8	8	2	2	32	32	32	36	34	88	35
2	December	max	40	40	38	37	37	35	34	34	33	35	35	36	32	37	38	38	31	37	34	37	34	8	2	*	40	33	34	36	38	38	38	36
	mber	min	44	42	41	43	43	41	41	40	41	40	38	38	4	39	40	40	42	45	47	49	48	9	‡ :	# 5	47	42	39	38	4	38	:	42
	November	max	48	44	43	44	45	44	44	45	45	44	43	44	44	44	46	43	45	4	6	21	21	8	9:	4 .	ř	44	41	41	41	41		45
	per	min	60	69	88	69	19	29	25	25	54	28	29	62	2	92	65	28	22	25	25	20	49	\$	2 5	7 S	70	53	22	21	20	49	48	24
	October	max	94	22	74	72	11	99	62	29				73	73	42	88				26	23	54		2.5	200	20	28	28	28	53	21	49	63
	Q	Day	1	2.	3	4	5.	9		8	9.	10	11	12	13	14	15	16.	17	18	19	20.	21	22	23	25		26	27	28.		30.		Average

POTOMAC RIVER BASIN

CRABTREE CREEK NEAR SWANTON, MD.

--Temperature recorder at gaging station, 0.9 mile upstream from Middle Fork, 1.0 mile downstream from Springlick Run, and 5.0 miles northeast LOCATION.

Of Swanton, Garrett County.

DRAINAGE AREA. --16.7 square miles.

RECORDS AVAILED. --Water temperatures: February 1952 to September 1955.

RECORDS AVAILEMENT -- Water temperatures: Maximum recorded, 82 F Aug. 2, 3; minimum, freezing point Jan. 28, 29.

EXTREMEN 1954-55 -- Water temperatures: Maximum recorded, 82 F Aug. 2, 3; minimum, freezing point on many days

during winter months. REMARRS.—Temperatures only fair, probably because of friction in recorder. Records of discharge for water year October 1954 to September 1955 given in WSP 1882.

Temperature (°F) of water, water year October 1954 to September 1955

	1	í	1																														1	
	mber	mtm	62	29	8	62	61	62	61	57	24	61	61	28	54	26	28	9	63	65	62	9	99	29	28	20	57	54	54	28	8	28	;	28
	September	max	99	68	63	67	89	11	2	68	67	69	89	67	65	99	89	68	69	12	68	67	99	89	9	9	63	58	61	64	65	62	1	99
	ust	min	67	2	2	20	7	72	20	69	67	67	89	99	64	62	99	99	67	3	3	<u>e</u>	(a)	3	<u>e</u>	<u>e</u>	<u>e</u>	ê	62	63	64	65	65	:
	August	max	90	22	83	8	90	22	75	74	69	73	72	69	99	2	73	72	69	2	<u>e</u>	<u>e</u>	<u>e</u>	3	<u>e</u>	<u>e</u>	<u>e</u>	ê	89	67	2	73	72	:
	July	min	62	61	64	64	65	64	63	65	99	99	65	63	64	64	65	(a)	(B)	(B)	æ	(a)	e	æ	(B)	89	(B)	(a)	99	69	69	89	68	
	ης	xeu	70	2	42	92	72	89	10	89	10	70	75	74	72	72	92	(g	8	æ	<u>e</u>	(a)	R	(R)	(g	11	<u>æ</u>	(a)	92	78	72	72	28	Ŀ
	June	nim	(a)	(B)	(B)	(g	(a)	(a)	(B)	54	52	52	53	25	23	25	25	25	24	26	28	28	9	9	9	9	28	56	22	55	22	28	:	:
	2	max	(a)	(a)	(B)	æ	(a)	(a)	(B)	29	54	54	54	24	24	53	54	28	61	61	9	64	65	67	64	99	62	9	61	65	2	73	;	:
	May	min	21	25	53	22	26	26	22	28	22	22	55	22	22	24	22	52	23	20	25	22	55	20	29	90	62	59	28	61	62	9	26	28
	W	max	28	61	61	65	65	9	28	9	29	25	58	28	28	28	9	61	28	9	28	28	64	63	99	99	67	67	89	89	67	67	64	62
hment/	E	min	42	\$	4	46	46	49	46	45	46	48	49	51	49	49	20	20	21	21	20	54	26	54	25	22	25	51	21	49	49	53		9
oh attac	April	max	51	25	25	25	21	25	20	49	25	54	52	24	51	24	22	58	26	23	9	62	61	62	28	90	26	52	21	28	20	24		22
mogra	March	min	44	44	43	46	84	43	41	41	43	45	48	46	46	44	44	46	42	41	7	41	94	45	43	45	42	39	39	38	39	33	40	43
1th the	Ma	max	48	47	46	20	20	49	43	43	48	48	51	20	49	49	48	20	46	44	45	48	48	48	45	47	45	45	40	42	43	46	48	44
order w	ary	min	34	34	34	32	36	36	36	40	39	\$	36	33	83	S	34	36	37	36	36	38	39	\$	9	39	88	38	\$	42	;	;		37
Water level recorder with thermograph attachment	February	max	34	34	32	36	36	36	40	42	41	42	40	36	33	34	38	37	38	38	38	\$	40	41	42	40	43	40	42	46	;	;		39
Vater le	ary	min	41	3	40	7	4	4	37	36	37	38	36	35	32	32	32	35	35	32	34	34	33	88	33	33	33	34	33	32	32	34	34	36
\	January	max	42	‡	42	43	42	45	40	38	39	39	38	36	36	32	36	36	32	35	35	34	33	33	33	33	33	34	34	33	34	34	34	37
	nber	min	40	39	37	37	37	33	33	33	33	34	33	33	34	32	38	37	33	37	38	36	35	35	32	34	36	35	36	37	40	4	42	36
	December	max	41	7	9	38	40	39	33	33	37	37	36	33	37	38	38	38	37	38	39	38	36	32	37	33	37	36	37	40	#	42	43	38
	nber	min	40	\$	88	88	39	39	40	4	42	42	42	42	43	43	4	44	45	42	48	47	4	£	42	£	42	\$	39	39	\$	\$:	42
	November	max	42	4	40	40	40	40	41	42	43	43	42	44	44	#	46	45	47	49	49	21	21	44	43	44	\$	42	40	41	\$	9	:	43
	ber	min	63	62	61	63	62	24	49	48	51	54	55	21	24	28	23	21	20	49	48	\$	4	48	48	49	20	51	23	20€	49	45	42	22
	October	max	99	64	99	99	88	65	57	54	9	61	64	65	63	65	61	53	25	21	20	48	20	51	20	25	25	53	22	54	20	48	45	57
		À A	1	2	3	4	5	9	7		6	10	11	12.	13	14	15	16	17	18.	19.	20.	21	22	23	24	25	26		28.	29	30	31	Average

a Temperature bulb out of water. b Temperature bulb covered with gravel.

POTOMAC RIVER BASIN -- Continued

SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, W. VA.

LOCATION. --At the Potomac Edison powerplant, 1,000 feet upstream from gaging station, and 2½ miles west of Petersburg, Grant County.

DRAINAGE AREA. --642 square miles.

RECORDS AVAILABLE. --Water temperatures: January 1947 to September 1953, November 1954

RECORDS AVAILABLE. -- water temperatures: January 1947 to september 1953, november 1954 to September 1955.

EXTREMES, 1954-55. -- water temperatures: Maximum, 84°F Aug. 3; minimum, freezing point on several days during January and February.

EXTREMES, 1947-55. -- water temperatures: Maximum, 84°F June 27, July 23, 1952, Aug. 3, 1955; minimum, freezing point on several days during winter months.

REMARKS. -- Records of discharge for water year October 1954 to September 1955 given in

WSP 1382.

Temperature (°F) of water, November 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		45	42	42	33	49	46	59	65	72	82	74
		42	41	45	33	45	50	60	64	75	83	70
2 3 4		40	40	42	32	46	55	62	65	79	84	67
4		41	39	44	32	48	51	63	65	8G	83	68
5		42	40	45	33	50	51	65	68	79	81	69
6		43	36	47	33	48	50	63	69	75	81	70
7		44	34	43	34	41	49	63	68	78	78	70
8		44	36	39	37	40	50	65	62	76	75	69
9		44	38	39	39	45	51	64	57	76	75	69
10		45	36	39	40	48	52	64	60	76	74	70
11		44	35	39	42	50	54	65	60	77	74	69
12		45	35	35	33	50	54	65	62	76	72	68
13		44	35	35	33	51	54	64	60	75	66	68
14		45	36	35	33	51	55	58	62	76	67	69
15		46	36	35	35	52	56	60	63	78	67	70
16		47	38	34	37	54	58	62	65	78	68	70
17		48	38	35	40	52	60	63	67	79	68	69
18		50	39	33	39	45	58	60	70	81	68	69 68
19 20		52	38	33	39	46	59	60	70	80	69	68
20		53	36	32	40	48	60	62	70	81	70	67
21		51	33	32	42	49	61	65	70	81	70	68
22		46	33	34	44	50	61	68	71	81	72	68
23		46	33	34	45	43	61	69	72	79	72	68
24 25	1	45	35	33	40	42	61	70	72	77	71	69
25		45	35	33	39	44	61	70	70	76	70	69
26		44	36	34	40	43	58	68	68	77	70	70
27	1	41	38	33	42	38	59	69	66	78	69	70
28		42	39	32	46	39	57	70	67	76	71	70
29		42	43	32		39	58	71	70	78	74	70
30		41	42	32		42	59	69	72	79	78	70
31			41	32		44		66		81	77	
ver- age		45	37	37	38	46	56	65	66	78	74	69

POTOMAC RIVER BASIN -- Continued

SOUTH BRANCH POTOMAC RIVER AT ROMNEY, W. VA.

LOCATION.--At water plant at Romney, Hampshire County, 18.6 miles upstream from gaging station near Springfield.
DRAINAGE AREA.--1,412 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1950 to March 1951, October 1951 to September 1952, January 1954 to September 1955.
EXTERMES, 1954-55.--Water temperatures: Maximum, 84°F Aug. 2-3; minimum, freezing point on several days during December to February.
EXTREMES, 1950-52, 1954-55.--Water temperatures: Maximum, 85°F June 29, 1952; minimum, freezing point on many days during winter months.
REMARKS.--Water temperatures furnished by Water Department, Romney, W. Va.

Temperature (°F) of water, water year October 1954 to September 1955

		· · · · · ·	mper acure	(1) 01 #	acer, wat	er year c	CLODEL 18	of to beh	remper 1	-		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	44	40	41	32	48	48	58	67	76	83	74
2	70	44	39	42	33	50	49	60	65	78	84	74
3	71	42	39	43	32	45	53	63	66	77	84	70
4		42	39	42	32	45	56	64	70	82	82	71
5		42	39	42	32	47	52	65	69	81	82	73
6		. 42	36	43	32	45	53	66	74	79	79	70
7		43	33	41	33	44	52	70	72	79	79	71
8		43	34	41	36	41	47	68	65	81	78	71
9		44	34	38	36	43	50	63	61	76	75	70
		44	36	37	37	48		64	58	77		70
10		44	36	37	3.1	48	51	64	58	77	74	70
11		44	35	36	40	50	54	60	60	79	75	70
12		45	35	36	35	51	55	64	60	78	76	72
13		45	36	35	32	51	56	66	59	77	67	69
14		43	36	34	32	50	56	62	58	77	65	68
15		43	36	34	32	50	56	58	58	80	70	68
16		45	37	34	34	50	50	62	60	80	71	69
17	55	47	38	34	36	48	55	63	64	81	68	72
18	54	50	39	32	38	46	55	60	74	82	66	72
19	55	50	39	33	38	46	59	61	73	82	65	72
20	53	50	37	33	41	45	60	67	69	83	68	73
20			31		*1	4.0	00	61	09	83	00	13
21	51	48	33	32	41	50	62	66	71	80	72	69
22	50	48	32	33	41	49	61	69	72	81	72	69
23	51	49	33	34	42	47	63	72	73	84	70	70
24	54	44	35	34	43	45	64	73	70	80	69	69
25	54	45	36	33	38	45	61	69	69	78	68	67
26	54	44	37	33	38	45	57	69	69	78	69	64
27	55	43	34	33	41	41	54	71	67	80	70	63
28	55	42	36	32	42	37	53	75	70	18	72	65
29	54	42	40	32		39	58	75	71	81	73	
	53	40	42	32	l.							65
30 31	48		42	32		40 44	59 	79 70	72	80 82	75 75	65
Aver-		 	 									
age		45	37	36	36	46	55	66	67	80	73	70

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

POTOMAC RIVER BASIN -- Continued

SOUTH BRANCH POTOMAC RIVER AT ROMNEY, W. VA. -- Continued

Temperature (°F) of water, January to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				35	34	47	47	66	72	74	78	72
		l		35	35	42	46	67	67	75	78	70
2 3 4	1	J	j	34	38	43	47	71	68	76	78	70
4				34	38	39	47	67	71	77	77	74
5		ļ	1	36	36	35	48	65	69	77	76	75
6				35	38	38	47	60	66	74	74	77
7	ł	ļ	1	35	34	39	52	57	68	74	76	78
8		1		35	37	38	60	56	69	72	76	75
9		1	1	35	34	42	55	56	70	72	75	75
10		l	ĺ	37	34	45	52	53	74	73	76	76
11	}	}	}	35	37	44	54	54	72	74	74	70
12				35	35	43	55	55	73	74	73	68
13	!	1	!	36	36	42	55	58	75	78	73	68
14		1	i	35	44	41	55	58	79	80	75	70
15	ł	1	ļ	36	43	40	54	59	75	80	73	71
16	ļ			33	43	40	54	58	74	74	75	72
17	1	1	ţ	33	40	39	55	57	70	73	75	71
18		i		33	45	39	53	62	65	76	75	72
19	Į	ł	l	33	46	39	56	60	66	74	76	72
20		Ì	Ì	33	45	40	57	57	67	76	77	73
21				33	44	43	63	57	70	78	74	70
22		1	l	33	47	41	65	58	74	79	76	66
23	ĺ	ł	i .	33	46	43	63	58	75	76	72	68
24		1	١ .	33	45	44	62	62	75	79	73	68
25				34	43	45	63	65	76	75	75	69
26]	33	45	47	62	68	77	76	73	68
27	ĺ			41	45	53	64	58	75	76	73	68
28	i	ì		38	46	54	65	62	74	77	74	68
29				42		55	63	68	74	80	74	69
30	l	l	Į.	38		55	64	70	74	80	73	70
31			L	33		52		71		79	73	
er-	ļ			35	40	43			72			20
age		L		35	40	43	56	61	72	76	75	69

Temperature (°F) of water, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Jul,	Aug.	Sept.
1	63	54	36	42	36	42	53	55	69	72	78	76
2	64	50	36	45	41	40	53	59	68	75	77	77
3	66	46	38	45	42	40	52	60	68	79	78	75
4	66	45	42	43	43	40	53	60	71	87	80	72
5	66	43	43	40	44	40	54	60	72	79	78	71
6	68	43	45	41	42	39	48	62	72	79	79	71
7	69	45	47	37	40	38	47	63	75	89	78	72
8	65	43	49	35	39	42	44	60	73	78	78	69
9	63	42	46	35	41	41	44	60	77	77	79	67
10	60	44	46	38	40	42	47	62	72	74	78	68
11	58	47	40	38	43	44	49	61	73	73	78	69
12	58	46	42	38	44	44	52	55	70	75	78	69
13	57	45	39	34	41	44	51	54	70	79	80	69
14	56	51	32	40	40	44	51	54	73	78	78	70
15	57	50	32	44	37	43	52	59	74	78	77	70 74
16	61	50	36	47	39	40	48	60	77	87	78	71
17	60	48	32	48	40	39	50	60	80	89	77	70
18	60	46	33	47	41	42	51	61	76	81	76	69
19	60	40	33	45	40	43	52	60	76	83	76	69
20	63	44	36	43	42	43	54	57	77	81	77	76
21	65	32	33	41	42	44	56	55	75	83	78	67
22	62	36	32	40	40	44	59	59	70	84	77	65
23	60	44	32	38	38	52	62	62	73	84	74	63
24	60	43	32	37	40	52	59	65	73	83	73	64
25	58	45	38	36	41	47	54	66	76	79	72	63
26	58	44 *	38	37	43	47	51	69	80	89	72	64
27	59	40	36	43	40	47	51	65	81	87	73	65
28	56	38	34	47	40	47	52	68	83	89	75	64
29	56	37	38	42	41	48	52	69	85	81	74	65
30	55	36	36	36		48	53	65	83	89	75	65
31	54		40	34		47		66		79	77	
Aver- age	61	44	38	41	41	44	52	61	75	87	77	69

POTOMAC RIVER BASIN

POTOMAC RIVER BASIN -- Continued

SOUTH BRANCH POTOMAC RIVER AT ROMNEY, W. VA. -- Continued

Temperature (°F) of water, October 1950 to March 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1 2	62	58	34	32	29	48						
2	65	58	40	32	31	49	l	l	l			
3	68	58	40	32	32	45	l	ì	l	ł	}	1
4 5	66	58	41	32	32	46		l	1	1		
5	63	54	40	33	32	49	ļ	l		į	Į	
		1	İ	1		i	l	l	1	l	1	
6	63	52	39	38	32	50	i	1	l	ł		1
7	62	54	41	38	32	51	Į.	Į	l	l	l	1
В	62	55	43	36	32	52	ſ	i	1	i	1	
9	62	54	42	32		50		1	1	į		1
10	60	56	40	32		46				{		1
11	59	51	40	33		42						
12	59	45	39	32		42			1	ŀ		
13	58	42	37	33		44	1	1	}	}	}	ł
14	57	40	37	34		43			1	l		
15	54	41	37	32		40	1		1	ł	1	
			} "	1		1 20	}	ł	1	1	ł	1
16	55	44	38	32	40	41		1				
17	55	45	36	32	42	40	1	1	l	l		
18	. 57	46	32	39	43	42	ì	ì	ì	İ		ì
19	59	46	32	38	43	42	İ		1		l	
20	59	47	32	39	42	42						
21	59	44	32	35	45	42						
22	59	45	32	32	44	42			1			1
23	59	41	32	32	42	42		1	ł	ł	ł	ł
24	58	44	32	31	42	44		1				
25	58	43	32	32	42	43		1	l			
	}	10	02	32	74	43	1	1	1	ł	ł	1
26	56	32	32	31	43	43						1
27	57	34	32	32	45	44						
28	57	33	33	34	47	47	1	1	1	{	1	(
29	54	32	32	38		51					i	
30	55		32	31		48]		1		i	1
31	58		32	31		48	1	1	1	{	ĺ	{
Aver-		T									1	
age	59	46	36	34		45		1	1	l	1	1

POTOMAC RIVER BASIN -- Continued

POTOMAC RIVER AT HANCOCK, MD.

LOCATION. --Temperature recorder at gaging station on left bank 0.2 mile downstream from Little Tonoloway Creek, half a mile downstream from new highway banked. Mashington County, and 1.1 miles upstream from Tonoloway Creek (formerly called Great or Big Tonoloway Creek).

BLINGE AREA. --4 (77 square miles. RECNES AVAILEDE. --Water temperatures: July 1952 to September 1955.

RECNES AVAILEDE. --Water temperatures: Maximum, 92°F July 17, Aug. 2, 3, 5; minimum, 33°F Dec. 7-11, 22-28, Jan. 18 to Feb. 10, Feb. 16, 17.

EXTREMES: 1952-55. --Water temperatures: Maximum, 93°F July 22, 1952; minimum, 33°F on many days during winter months.

REMARKS. --Temperatures only fair, probably because of friction in recorder. Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

continuous ethal alcohol-actuated thermograph) Temperature (°F) of water, water year October 1954 to September 1955 (Recorder with temperature attachment.

																																	ı	1
	an la	min	11	75	74	74	73	75	76	73	72	1	74	73	11	89	69	11	74	74	22	5 /	72	9 6	0 4	3 2	3 1	65	65	92	9 1	67		12
o the state of	adac	max	79	11	92	74	77	78	79	92	74	16	77	76	73	72	75	7.7	16	80	- 6	e.	75	27.	8 9	8 6	2	67	99	2	=	89	:	74
1	nst	min	79	8	83	83	84	84	84	81	79	11	78	16	72	89	69	71	74	72	g (2	5	2 ;	• •		?	=	22	2	19	8 2	2	76
	ısınğır	max	8	92	85	91	85	91	88	87	82	80	82	8	16	72	7	74	75	75	72	=	7	2 2	2 2	: 2	۱ :	73	74	92	23	æ 5	5	8
	July	min	79	80	81	81	84	81	79	83	81	20	84	83	82	81	83	82	82	82	88	82	85	25 6	200	3 5	5	8	82	84	82	8 6	2	82
ľ	5	max	85	84	81	88	8	82	81	84	82	81	81	82	82	86	88	90	92	88	88	9 8	91	5 6	3 4	3 8	6	8	6 —	8	81	83	40	88
	<u> </u>	min	70	69	89	69	71	74	74	64	61	9	61	63	62	62	61	63	99	2	22	2	7.	2 !	: E	: 6	?	7	72	72	7	16	:	69
J	nme	max	73	7	7.5	7.	11	81	78	74	64	61	63	63	63	62	63	99	2	72	72	9.	78	8	2 6	2 6	2	7	7	22	200	8	:	72
rmogr	May	min	57	29	62	ន	99	67	65	89	65	65	64	65	65	64	65	65	65	64	65	20	69	7 i	7 2		:	2	74	16	92	9 2	2	89
continuous ethyl alcohol-actuated thermograph	Z	max	9	63	64	99	69	69	69	20	89	67	67	69	69	65	67	67	99	67	67	69	72	Z :	2 2		: :	16	77	11	29	28	3	20
nol-actu	rii	min	43	47	48	20	21	25	48	46	48	25	22	22	22	22	99	99	28	28	52	9	8	20	20	2 2	3	22	23	25	24	22	:	24
Jyl alco	April	max	48	2	23	2	54	23	25	49	25	22	22	21	21	20	24	29	20	28	9	9	62	\$:	4.5	5 6	3	28	22	24	22	21	:	28
nous et	March	min	43	41	47	41	48	49	46	44	42	43	46	49	25	2	2	51	49	48	8 :	4.7	47	4.	-		}	46	43	4	4	\$:	4	46
- L	Ma	max	47	48	48	48	49	20	20	46	44	46	49	25	23	2	23	25	25	48	48	4	48	4	- 4	: :	;	41	46	43	4	£.	42	48
chment	uary	min	33	33	33	33	33	33	33	33	33	33	32	35	34	34	34	33	33	34	32	36	37	8 8	ž :	1 8	3	39	3	4	:	!	:	35
ire atta	February	max	33	33	33	33	33	33	33	33	33	32	32	35	32	34	34	34	35	32	5	37	38	40	7:	1 ;	ř	4	4	43	:	:	:	38
mperat	January	min	40	4	4	40	41	41	4	38	39	eeee	37	36	36	35	32	32	32	33	ខ្ល	2	8	8	3 8	3 8	3	33	88	33	8	88	2	36
(Recorder with temperature attachment,	Jan	max	40	40	40	41	41	41	41	40	39	38	38	37	36	36	35	35	35	32	88	25	33	200	200	3 8	3 :	8	33	33	8	88	2	38
corder	December	min	41	40	36	38	37	35	33	33	33	88	33	34	34	34	38	38	38	38	88	3.7	34	8	3 6	3 5	3	33	8	33	3 5	36	gg g	35
Ä	Dece	max	41	41	40	39	38	37	32	33	33	33	34	34	34	38	38	38	38	38	88	8	37	4.0	38	3 8	3	8	33	34	36	8, 4	Ç.	36
	November	nin	48	46	\$	42	42	41	41	40	# :	4	41	42	41	4	43	4	43	46	7.4	2	21	£ .	4	44	: :	44	42	4	4	4	:	44
	Nove	max	51	48	46	43	42	42	41	41	43	4	43	43	43	43	43	43	46	41	8 2	7	5	7 5	7 2	4	2	44	4	42	42	4	:	45
	per	min	74	74	73	74	73	67	62	9	09	63	65	67	69	2	9	28	22	28	8 2	4	ខ្ល	2 5	3 2		3 1	96	8	22	2	25	7	61
	Octobe	max	42	77	82	92	75	73	67	63	65	8	20				E	9	28	22	26	8	%	7	# u	3.5	3 1	26	2	21	2	2 2	3	2
	100	Day	1	2	3	4	2	6	7	8	6	то	11	12	13.	14	15	16	17	18	19		21	22	43			26.	27	28	29	30	:	Average

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.

OCATION. --At gaging station at highway bridge, 1.0 mile west of Front Royal, Warren County, and 3.5 miles upstream from confluence with North Fork.

DRAINGER, REAL.—16.38 square miles.

RECORDS ANTIABLE.—Chemical analyses: October 1948 to September 1952 to September 1955.

RECORDS ANTIABLE.—Chemical analyses: October 1948 to September 1955.

RECORDS ANTIABLE.—Chemical analyses: October 1955.

RECORDS ANTIABLE.—Chemical analyses: October 1955.

SECHEMIC SEPTEMBER 1955.

EXHERIES, 1954-55—Hardness: Maximum daily, 369 micromhos Oct. 7; minimum, 71 ppm Aug. 11-20.

Specific conductance: Maximum daily, 1170 ppm Oct. 17; minimum, 36. Ppm Feb. 23-28, 1953.

SCHEMEN 1955—Hardness: Maximum daily, 1170 ppm Oct. 17; minimum daily, 1 ppm on many days.

SCHEMEN 1955—Fardness: Maximum daily, 1170 ppm Oct. 17; minimum daily, 1 bpm on many days.

SCHEMEN 1955—5—Hardness: Maximum daily, 1170 ppm Oct. 17; minimum daily, 1 bpm on many days.

SCHEMEN 1955—5—Hardness: Maximum daily, 10, minimum daily, 1 bpm on several days during January and February 1955.

Specific conductance: Maximum, 90° July 5, 1953; minimum, 65 ppm Feb. 23-28, 1953.

Specific conductance: Maximum, 90° July 5, 1953; minimum, freezing point on several days during January and February 1954.

Sediment concentrations (April 1953 to September 1955): Maximum daily, 1,70 ppm Oct. 17, 1954; minimum daily, 1 ppm on many days during each year.

Schiment loads (April 1953 to September 1955): Maximum daily, 1,70 ppm Oct. 17, 1954; minimum daily, 1 ppm on many days during each year.

Schiment loads (April 1953 to September 1955): Maximum daily, 1,70 ppm Oct. 17, 1954; minimum daily, 1 ton on several dox and september 1955 given in WSD 1852.—6c. The 1955 given in WSD 1852.—6c. The 1955 given in WSD 1852.—6c. The 1955 given in WSD 1852.—6c. The 1955 given in WSD 1852.—6c. The 1955 given in WSD 1852.—6c. The 1955 given in WSD 1954.—7c. The

oming) and we are no meter now million water were Databar 1064 to Santomber 1065

	1			Cner	nical anal	yses, in p	arts per m	illion, wat	er year Oc	Chemical analyses, in parts per million, water year October 1954 to September 1955	to Septemb	er 1955						
enter Tree Cal-	Cal-	Cal-			Mag-	-	Potas-	Bicar-			ļ		Dissolved	Hardness as CaCO ₃	ness CO,	Specific conduct-		
discharge (SiO ₂) (Fe) (Ca) (Mg)	(Fe) cium	cium (Ca)		nesi (M)	mn (g	(Na)	Sium (K)	bonate (HCO ₃)	(80,	(C1)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Н	Color
38	0.00	38	_	16		10	3.3	185	11	11	0.0	9.0	202	191	6	348	7.9	
10 31	.10 31	31	_	10	_	1	;	130	13	;	;	;	;	118	12	263	7.8	45
06 30	.06 30	30		7.8		;	;	111	12	;	1	ł	;	101	16	233	4.9	15
.00 38	.00 38	38		12		1	;	151	14	;	;	;	;	144	20	302	7.9	80
00. 37	.00 37	37	_	12		;	1	152	14	;	1	;	;	142	17	299		9
10.	.01 24	24		5.5	_	!	1	83	8.8	;	!	:	1	82	14	176	7.5	20
.02 32	.02	32		9.7		;	;	122	12	:	;	;	;	120	50	248	6.	-
04 29 8	. 04 29 8	29		8.8		:	1	111	13	1	!	;	;	109	18	230	2.5	-
05 26	.05 26 6	26	9	6,2		;	;	96	15	;	;	;	;	06	12	202	7.5	10
7.2	.01	23		5.1		2, 4	1.3	82	8.7	3.4	٦.	4.5	86	78	6.	173	7.5	4
00 32	.00 32	32		89		:	;	131	11	;	:	;	;	114	-	244	8.7	10
36	.00	36		10		;	1	151	11	;	:	:	!	131	<u>-</u>	274	8.	ıo
02 33	.02 33	33		9.3		;	;	134	10	:	1	;	1	121	=======================================	253	7.9	22
00 24	.00 24	24	_	5.5		!	;	93	8.6	i	;	1	;	82	9	184	8.0	œ
1,30800 30 7.5	.00	30		7.5		1	1	121	10	:	1	1	:	106		224	 	ıcı
06 24	.06 24	24	_	5.1		;	;	94	9.0	:	!	;	;	8	**	184	7.1	33
03 26	.03 26	56		5.4		1	:	907	9.6	;	1	;	:	84	10	195	2.8	6
06 24	.06 24	24		5.0		:	!	93	7.5	;	;	;	1	80	4	181	7.9	15

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA. -- Continued

1			l I						ЭL	O.	ь		пIJ.	, III	,	W	379	1	Un.	n 1	
		Color	ဇ	2	- n	2	ro.	8	22	12	s.	~	9	6	8	ø,	9	ß	2	10	
		Hd	8.2	 	. 80	8.1	8	7.8	7.6	8.7			8.8	8.5	7.9	æ.	8.4	8.1	8.2	:	
	Specific conduct-	ance (micro- mhos at 25°C)	232	217	218	241	226	221	170	208	232	239	209	238	191	200	244	239	264	223	
	ness CO,	Non- carbon- ate	15	7:	81	21	12	11	14	-	0	6	*	0	4	13	2	6	17	11	
	Hardness as CaCO,	Calctum, mag- nestum	811	82	115	130	118	113	82	9	2	119	103	112	71	103	121	118	138	113	
nued	Dissolved	(residue on evap- oration at 180°C)	128	;	: :	;	}	;	}	:	136	;	!	;	;	;	;	128	140	;	
55Conti		(NO ₃)	3.6	;	: :	;	;	;	;	;		;	;	1.1	2.6	3.4	2.1	1.1	1.9	;	
ember 19	Ē	(F)	0.0	:	; ;	!	:	;	;	1	٥.	;	:	1	1	i	!	0.	۰.	1	
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued		(C1) (F)	4.4	:	: :	;	:	;	;	!	6.2	;	:	;	1	:	1	5.6	7.1	;	
r October	- N-10	(°0s)	11			9.2	7.6	9.0	19	15	5.8	11	7.2	14	12	9.1	14	12	12	::	
water yea	Bicar-	bonate (HCO ₃)	126	813	118	133	126	117	87	114	129	a 135	b116	c 136	82	110	142	133	148	119	
er million,	Potas-	sium (K)	1.2	:	: :	:	;	!	1	;	1.7	1	1	;	1	:	1	1.5	1.6	. 1	
in parts p	17.17.0	(Na)	3.0	:	: :	;	1	;	1	;	5.2	;	;	;	1	;	;	3.6	4.7	ł	
analyses,	Mag-	nesium (Mg)	9.4	œ ;	. 6	==	01	9.6	5.6	8.7	10	12	=	12	5.8	8.0	10	11	13	8.9	
hemical	Cal-	ctum (Ca)	32	7 0	8 8	34	31	58	22	26	22	28	23	25	19	88	32	58	34	58	1
0	į	(Fe)	0.00	8.8	8 8	8	8	8	. 6	Š	2	8	.02	90	.03	8	8	8	.03	0.02	
		(8102)	2.8	:	: :	;	;	1	;	!	4.6	!	!	;	:	1	1	5.8	4.0	;	
	Mean	discharge (cfs)	1,514	2,246	1,266	1, 229	1, 222	1,741	3, 083	1,007	697	191	287	199	16,703	3, 272	1, 594	1,065	748	2, 159	
		Date of collection	Apr. 1-10, 1955	Apr. 11-20	May 1-10	May 11-20	May 21-31	June 1-10	June 11-20	June 21-30	July 1-10	July 11-20	July 21-31	Aug. 1-10	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average	

a Includes equivalent of 2 parts per million carbonate (CQ₃). b Includes equivalent of 4 parts per million carbonate (CQ₃), c Includes equivalent of 3 parts per million carbonate (CQ₃).

POTOMAC RIVER BASIN

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	48	42	47	36	52	51	63	72	84	87	77
2	75	45	42	45	33	51	53	67	70	87	88	75
3)	75	45	41	45	33	50	54	67	71	88	88	74
4	77	43	40	45	33	54	54	70	73	88	89	78
5	77	45	40	44	33	54	56	74	75	90	88	75
6	72	45	38	46	33	52	55	71	80	86	86	76
7	64	44	36	43	35	48	55	70	76	87	85	76
8	60	47	35	40	37	47	53	70	71	87	79	74
9	62	47	38	39	38	47	56	69	67	84	76	74
10	65	47	39	41	42	51	60	69	66	85	75	75
11	68	46	38	39	40	51	61	69	68	84	79	77
12	71	47	36	36	35	53	64	72	68	83	77	76
13	73	46	36	38	33	54	58	68	67	82	69	73
14	73	48	37	38	33	54	59	64	66	83		72
15	71	48	38	39	37	54	60	66	68	85	71 73	74
16	60	47	38	38	39	58	64	70	72	87	75	77
17	58	49	38	38	41	52	63	69	74	87	75	75
18	56	51	40	36	41	52	61	69	76	88	70	77
19		54	39	36	42	50	62	70	72	87	71	75
20	54	55	38	36	44	51	64	73	76	87	72	77
21	55	53	36	35	45	51	66	74	77	88	75	74
22	57	52	34	36	46	52	66	73	78	89	77	72
23	57	49	37	36	47	51	67	77	81	87	75	68
24	60	49	38	36	45	53	67	79	80	84	75	68
25	58		38	36	45	49	63	79	75	86	74	69
26	58	45	37	37	44		61	76		87	76	68
27	60	44	39	36	46	42	58	79	75	89	75	67
28	58	44	44		51	44	60	80	79	89	76	70
29	55	44	44	33		44	62	83	80	84	79	71
30	53	43	45	33		46	63	80	82	81	80	69
31	48		45	33	<u> </u>	49		75		82	78	
lver- age	64	47	39	39	39	51	60	72	74	86	78	73

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA. -- Continued

Suspended	l sediment,	water	year	October	1954	to Se	ptember	1955	

		October			November	1001 00 000	lember 1950	December	
	Maar	Suspende	d sediment		Suspende	d sediment	7/		d sediment
Day	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons
	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	264	2	2	731	(ppiii) 5	10	1 400		
2	376	2	2	666	5	9	1,400 1,300	5 4	20 14
3	388	2	2	616	3	5	1,150	4	12
4	388	1	1	666	4	7	1,130	4	12
5	376	1	1	592	3	5	1,090	3	9
6	376	1 1	1	520	3	4	1 000	5	
7	376	l i	i	532	3	4	1,090 854	3	15 7
8	376	1	1	604	2	3	1,050	4	ıi
9	412	1	1	520	2	3	757	2	4
10	376	1	1	508	2	3	840	3	7
11	352	1	1	496	2	3	882	3	7
12	340	1	1	484	2	3	1,160	4	13
13	328	1 1	1	460	1	1	1,110	3	9
14	316 2,170	1 112	1 656	400	1	1	1,460	4	16
15	,,,,,,	112	000	412	1	1	2,240	12	73
16	14,800	1,108	44, 300	436	1	1	2,520	17	115
17	9,550	1,170	30, 200	400	1	1	2,240	10	60
18	3,380	524	4,780	436	1	1	2,100	8	45
19 20	2,100 1,430	213 78	a1,210 301	484 1,220	1 25	1	2,520	8	54
				1,220	20	82	3,520	20	190
21	1,160	34	106	7,500	252	5,100	3,080	24	200
22	1,010	22	60	7,700	218	4,530	2,520	27	184
23 24	770 692	17 13	35 24	5,250 3,600	97 49	1,370	2,100	14	79
25	568	10	15	2,800	49 27	476 a 204	1,890 1,740	8 5	41 23
]] 2,000		a 201	1,120		23
26	556	8	12	2,240	13	79	1,570	3	13
27 28	604 496	7 6	11 8	1,890	8	41	1,410	3	11
29	556	5	8	1,600 1,530	7 6	30 25	1,250 1,400	2 2	7
30	604	6	10	1,370	5	18	2,660	13	8 93
31	679	5	9				8,540	243	5,600
Total.	46, 269		81,762	46,663		12,021	58,573		6,952
		January]	February		T	March	
1	6,390	222	3, 830	653	3	5	1,540	2	8
2	4,500	82	996	592	1	2	1,650	3	13
3 4	3,520	36	342	757	2	4	1,670	2	9
5	2,940 2,520	22 14	175 95	692 718	2 1	4 a 2	1,720 2,450	3 19	14 126
			1)			1		
6	2,310 2,100	11 9	69 51	653 1,890	2 56	4 286	9,250	274	6,840
7 8	1,890	7	36	6,050	233	3,810	13,400	580 524	21,000 14,400
9	1,720	5	23	3,900	432	4,550	6,220	189	3,170
10	1,570	5	21	3,010	151	1,230	4,800	73	946
11	1,510	4	16	2,590	44	308	2 000	44	463
12	1.460	4	16	2,390	24	159	3,900 3,380	39	356
13									
	1,370	3	11	2.240	15	91	3,150	37	315
14	1,370 1,290	3 3	10	2,240 2,100	8	91 45	3,150 2,800	37 24	315 181
	1,370 1,290 1,230	3		2.240		91	3,150	37	315
14 15	1,290 1,230 1,150	3 3 3	10	2,240 2,100 1,890	8	91 45 31	3,150 2,800 2,520	37 24	315 181 163
14 15 16	1,290 1,230 1,150 1,090	3 3 3 2 3	10 10 6 9	2,240 2,100 1,890 1,650 1,540	8 6 4 3	91 45 31 18 12	3,150 2,800 2,520 2,380 2,380	37 24 24 24 24	315 181 163 154 154
14	1,290 1,230 1,150 1,090 1,090	3 3 2 3 2	10 10 6 9 6	2,240 2,100 1,890 1,650 1,540 1,470	8 6 4 3 3	91 45 31 18 12 12	3,150 2,800 2,520 2,380 2,380 2,310	37 24 24 24 24 24 24	315 181 163 154 154 150
14	1,290 1,230 1,150 1,090 1,090 1,040	3 3 3 2 3 2 2	10 10 6 9 6 6	2,240 2,100 1,890 1,650 1,540 1,470 1,360	8 6 4 3 3 2	91 45 31 18 12 12 7	3,150 2,800 2,520 2,380 2,380 2,310 2,170	37 24 24 24 24 24 24	315 181 163 154 154 150 111
14	1,290 1,230 1,150 1,090 1,090 1,040 952	3 3 2 3 2 2 2 2	10 10 6 9 6 6 5	2,240 2,100 1,890 1,650 1,540 1,470	8 6 4 3 3	91 45 31 18 12 12	3,150 2,800 2,520 2,380 2,380 2,310	37 24 24 24 24 24 24	315 181 163 154 154 150
14 15 16 17 18 20	1,290 1,230 1,150 1,090 1,090 1,040 952	3 3 3 2 3 2 2 2 2	10 10 6 9 6 6 5	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220	8 6 4 3 3 2 2 2	91 45 31 18 12 12 7 7	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170	37 24 24 24 24 24 24	315 181 163 154 154 150 111
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868	3 3 2 3 2 2 2 2	10 10 6 9 6 6 5 5	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,200 1,110	8 6 4 3 3 2 2 2 2	91 45 31 18 12 12 7 7	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170 2,170 2,660	37 24 24 24 24 24 19 18	315 181 163 154 154 150 111 102
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812	3 3 2 3 2 2 2 2 1 2	10 10 6 9 6 6 5 5	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,200 1,110 1,160	8 6 4 3 3 2 2 2 2 2 2	91 45 31 18 12 12 7 7	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170 2,170 2,660 6,610	37 24 24 24 24 29 19 18	315 181 163 154 154 150 111 102 100 237 3,300
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868	3 3 2 3 2 2 2 2	10 10 6 9 6 6 5 5	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,110 1,160 1,260	8 6 4 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	91 45 31 18 12 12 7 7 7 6 6 6	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,100 2,170 2,660 6,390	37 24 24 24 24 29 19 18 17 33 185 266	315 181 163 154 154 150 111 102 100 237 3,300 4,590
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798	3 3 2 2 2 2 2 1 1	10 10 6 9 6 6 5 5 2 4 2	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,200 1,110 1,160 1,260 1,460	86 43322 22222	91 45 31 18 12 12 7 7 6 6 6	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170 2,170 2,660 6,610	37 24 24 24 24 29 19 18	315 181 163 154 154 150 111 102 100 237 3,300
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798	3 3 2 3 2 2 2 2 1 1 1	10 10 6 9 6 6 5 5 2 4 2 2	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,110 1,160 1,260 1,460	8 6 4 3 3 2 2 2 2 2 2 2 2 2 1	91 45 31 18 12 12 7 7 7 6 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,100 2,170 2,660 6,610 6,390 4,650 3,750	37 24 24 24 24 24 19 18 17 33 185 266 105	315 181 163 154 155 111 102 200 237 3,300 4,590 1,320
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798	3 3 3 2 2 2 2 2 1 2 1 1 1 2 2	10 6 9 6 6 5 5 2 4 2 2 2	2,240 2,100 1,890 1,650 1,540 1,470 1,380 1,220 1,200 1,110 1,160 1,260 1,460	86 43322 2222 12	91 45 31 18 12 12 7 7 6 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,100 2,170 2,660 6,610 6,390 4,650 3,750 3,300	37 24 24 24 24 24 19 18 17 33 185 266 105	315 181 163 154 154 150 111 102 100 237 3,300 4,590 1,320 516 225
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798	3 3 2 3 2 2 2 1 1 1 2 3 4	10 10 6 9 6 6 5 5 2 4 2 2	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,110 1,160 1,260 1,460	8 6 4 3 3 2 2 2 2 2 2 2 2 2 1	91 45 31 18 12 12 7 7 7 6 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,100 2,170 2,660 6,610 6,390 4,650 3,750 3,300 2,870	37 24 24 24 24 29 19 18 17 33 185 266 105	315 181 163 154 154 150 111 102 237 3, 300 4, 590 1, 320 516 285 178
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798 770 705 568 705 679	3 3 3 2 3 2 2 2 2 1 1 1 1 2 3 4 4 2 4 2 4 4 2 4 4 4 4 4 4 4 4 4 4	10 6 6 6 5 5 2 4 2 2 2 2 3 8 4	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,110 1,160 1,260 1,460 1,410 1,430 1,430	86 43322 2222 12	91 45 31 18 12 12 7 7 7 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170 2,170 2,660 6,610 6,610 4,650 3,750 3,300 2,520 2,240	37 24 24 24 24 24 19 18 17 33 185 266 105	315 181 163 154 155 111 102 100 237 3, 300 4, 590 1, 320 516 285 178 109 61
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798 770 705 679 558 705 679 592	3 3 2 3 2 2 2 1 1 1 2 3 4	10 10 6 6 6 5 5 2 4 2 2 2 4 a 5 8	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,110 1,160 1,260 1,410 1,430 1,430	8 6 4 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	91 45 31 18 12 12 7 7 7 6 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,100 2,170 2,660 6,610 6,390 4,650 3,750 3,300 2,520 2,520 2,240 2,100	37 24 24 24 24 19 18 17 33 185 266 105 51 32 23 16 10	315 181 163 154 155 111 102 100 237 3,300 4,590 1,320 516 285 178 109 61
14	1,290 1,230 1,150 1,090 1,090 1,040 952 910 868 812 744 798 770 705 568 705 679	3 3 3 2 3 2 2 2 2 1 1 1 1 2 3 4 4 2 4 2 4 4 2 4 4 4 4 4 4 4 4 4 4	10 6 6 6 5 5 2 4 2 2 2 2 3 8 4	2,240 2,100 1,890 1,650 1,540 1,470 1,360 1,220 1,200 1,110 1,160 1,260 1,410 1,430 1,430	8 6 4 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	91 45 31 18 12 12 7 7 6 6 6 6 7 8	3,150 2,800 2,520 2,380 2,380 2,310 2,170 2,170 2,170 2,660 6,610 6,610 4,650 3,750 3,300 2,520 2,240	37 24 24 24 24 19 18 17 33 185 266 105 51 32 23 16 10	315 181 163 154 154 150 111 102 237 3, 300 4, 590 1, 320 516 285 178 109 61

a Computed from estimated concentration graph.

POTOMAC RIVER BASIN

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.--Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April	lou bournon	i i i i i i i i i i i i i i i i i i i	May	T to septem	1	June	
			sediment	-		d sediment	 		i sed ment
_	Mean	Mean	sediment	Mean	Mean	u sequinent	Mean	Mean	a sea mene
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	1,960	7	37	1,470	15	60	994	6	16
2	1,820	9	44	1,460	12	47	952	6	15
3	1,690	9 8	41 35	1,300	10 9	35	882	4 5	10 11
4 . 5	1,610 1,510	7	29	1,260 1,150	8	31 25	784 812	6	13
5	1,010	•	"	1,100	۰	20	0.2	"	
6	1,440	6	23	1,090	7	21	812	7	15
7	1,390	6	23	1,040	6	17	868	8	19
8	1,330	6	22	1,010	6	16	1,550	37	155
9	1,300	13	46	910	7	17	5,410	180	2,630
10	1,090	4	12	882	6	14	4,350	474	5,570
11	1,160	4	13	868	7	16	3,220	425	3,690
12	1,230	4	13	812	6	13	3,600	252	2,450
13	1,690	6	27	938	3	8	5,880	218	3,460
14	1,890	13	66	1,130	6	18	4,500	230	2,790
15	1,890	13	66	1,270	6	21	3,380	142	1,300
	3,450	61	568	1 270		22	0.720	77	568
16 17	3,450	59	538	1,370 1,600	6 7	30	2,730 2,310	59	368
18	2,870	46	356	1,500	6	24	1,960	39	206
19	2,590	43	301	1,440	5	19	1,750	24	113
20	2,310	35	218	1,360	4	15	1,500	17	69
			ا ا				İ		
.21	2,170	34	199	1,200	4	13	1,340	16	58
22	2,240 2,030	54 32	327 175	1,050 1,150	4 4	11	1,150 994	12 11	37 30
23 24	1,960	31	164	1,150	6	12 20	994	10	30 27
25	2,030	31	170	1,750	6	28	980	8	21
				· ·					
26	2,240	34	206	1,320	5	18	966	n l	1
27	2,030	27	148	1,390	4	15	924	ll _	
28	1,890 1,720	24 20	122 93	1,150	5 5	16	952 938	7	a 17
29	1,570	16	68	1,160 1,040	5	16 14	840	lj	
30				1,010	6	16		ľ	
					_				
Total	57,480		4, 150	37.300		648	58, 315		23 726
Total.	57,480	L	4, 150	37,300		648	58, 315		23 726
		July	4,150		August			September	
1	784	L	4, 150	653	1	2	1,700	8	37
1	784 666	L	4,150	653 568	1 1	2 2	1,700	8 5	37 21
1 2 3	784 666 744	July		653 568 544	1 1 2	2 2 3	1,700 1,580 1,490	8 5 9	37 21 36
1 2 3	784 666	L	4, 150	653 568 544 616	1 1	2 2	1,700 1,580 1,490 1,760	8 5 9 12	37 21
1 2 3 4	784 666 744 616 692	July		653 568 544 616 616	1 1 2 1	2 2 3 2	1,700 1,580 1,490 1,760 1,890	8 5 9 12 9	37 21 36 57 46
1 2 3 4 5	784 666 744 616 692 640	July		653 568 544 616 616	1 1 2 1	2 2 3 2	1,700 1,580 1,490 1,760 1,890	8 5 9 12 9	37 21 36 57 46
1 2 3 4 5	784 666 744 616 692 640 705	July		653 568 544 616 616 679 966	1 1 2 1	2 2 3 2	1,700 1,580 1,490 1,760 1,890 1,820 1,580	8 5 9 12 9	37 21 36 57 46 54 26
1 2 3 4 5 6 8	784 666 744 616 692 640 705 784	July 4	8	653 568 544 616 616 679 966 1,130	1 1 2 1 3	2 2 3 2 5	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490	8 5 9 12 9 11 6 4	37 21 36 57 46 54 26 16
1 2 3 4 5 6 7 9	784 666 744 616 692 640 705	July		653 568 544 616 616 679 966	1 1 2 1	2 2 3 2	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370	8 5 9 12 9	37 21 36 57 46 54 26
1 2 3 4 5 6 8	784 666 744 616 692 640 705 784 798 544	July 4 6 4	8 13 6	653 568 544 616 616 679 966 1,130 1,220 994	1 1 2 1 3	2 2 3 2 5	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260	8 5 9 12 9 11 6 4 3 2	37 21 36 57 46 54 26 16 11
1	784 666 744 616 692 640 705 784 798 544	July 4	13 6	653 568 544 616 616 679 966 1,130 1,220 994	1 1 2 2 1 3 3	2 2 3 2 5	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260	8 5 9 12 9 11 6 4 3 2	37 21 36 57 46 54 26 16 11 7
1	784 666 744 616 692 640 705 784 798 544	July 4 6 4 5 5	13 6 10	653 568 544 616 616 617 966 1,130 1,220 994	1 1 2 1 3 3 3 4	2 2 3 2 5	1,700 1,580 1,490 1,760 1,890 1,580 1,490 1,370 1,260	8 5 9 12 9 11 6 4 3 3 2 2 2 2	37 21 36 57 46 54 26 16 11 7
1	784 666 744 616 692 640 705 784 798 544 744 1,190	July 4 6 4 5 6 6	13 6 10 16 23	653 568 544 616 616 679 966 1,130 1,220 994 938 1,740	1 1 2 1 3 3 4	2 2 3 2 5 11 5 12 19,800	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,230 1,120 1,180	8 5 9 12 9 11 6 4 3 2 2 2 2 2	37 21 36 57 46 54 26 16 11 7
1	784 666 744 616 692 640 705 784 798 544 744 1,190 1,400 826	July 4 6 4 5 5 6 5	13 6 10 16 23	653 566 544 616 616 679 966 1,130 1,220 994 938 1,740 14,500 9,100	1 1 2 1 3 3 4 4 109 506 252	2 2 3 3 2 5 5 11	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230	8 5 9 12 9 11 6 4 3 2 2 2 2 2	37 21 36 57 46 54 26 16 11 7
1	784 666 744 616 692 640 705 784 798 544 744 1,190 1,400 826 718	July 4 6 4 5 5 6 5 5	13 6 10 16 23 11	653 568 544 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800	1 1 2 1 3 3 4 109 506 252 116	2 2 3 2 5 5 11 512 19,800 6,190 1,500	1,700 1,580 1,490 1,760 1,890 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,120 1,120 1,230 1,120 1,230	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 1,400 826 718	July 4 6 4 5 5 6 5 2	13 6 10 16 23 11 10	653 568 544 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800	1 1 2 1 3 3 4 109 506 252 116	2 2 3 2 5 5 11 512 19,800 6,190 1,500	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 962	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718	July 4 6 4 5 5 6 5 5 2 2 3	13 6 10 16 23 11 10	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800	1 1 2 1 3 3 4 109 506 252 116 87	2 2 3 2 5 5 11 512 19,800 6,190 1,500 864 2,010	1,700 1,580 1,490 1,760 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,120	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3 3 3
1	784 686 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532	July 4 4 5 5 6 7 5 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	13 6 10 16 23 11 10 4 a5 7	953 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800	1 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133	2 2 3 2 5 5 11 11 512 19,800 6,190 1,500 864 2,010 155,000	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,370 1,260 1,120 1,120 1,120 1,120 1,180 1,230 962	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 6 3 3 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520	July 4 6 4 5 5 6 5 2 3 5 3	13 6 10 16 23 11 10 4 4 25 7	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 59,300	1 1 2 1 3 3 4 109 506 252 116 87 141 1,133 1,146	2 2 3 2 5 5 11 19,800 6,190 1,500 864 2,010 155,000 183,000	1,700 1,580 1,490 1,760 1,890 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 962 1,010 973 1,030 940	8 5 9 12 9 11 6 4 3 2 2 2 1 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 6 3 3 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568	July 4 6 4 5 5 6 5 5 2 3 5 3 3	13 6 10 16 23 11 10 4 4 25 7	953 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800	1 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133	2 2 3 2 5 5 11 19,800 6,190 1,500 864 2,010 155,000 183,000 12,000	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,370 1,260 1,120 1,120 1,120 1,120 1,180 1,230 962	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 6 3 3 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568	July 4 4 5 5 6 6 5 5 2 3 3 3 2	13 6 10 16 23 11 10 4 45 7 45 5	653 568 544 616 616 616 6179 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 59,300 16,900 7,310	1 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133 1,146 262 97	2 2 3 2 5 5 11 19,800 6,190 1,500 864 2,010 155,000 183,000 12,000	1,700 1,580 1,490 1,760 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,010 962 1,010 973 1,030 940 973 898	8 5 9 12 9 11 6 4 3 3 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3 3 3 3
1	784 666 744 616 692 640 705 788 544 744 1,190 826 718 744 666 532 520 568	July 6 4 55 66 55 22 33 53 32 26	13 6 10 16 23 11 10 4 a5 7 7 4 5	953 568 544 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,660 5,270 50,800 59,300 16,900 7,310 5,100	1 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133 1,146 262 97 58	2 2 3 2 5 5 11 11 512 19,800 6,190 1,500 1,500 155,000 12,000 12,000	1,700 1,580 1,490 1,760 1,890 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 1,120 1,180 1,230 1,010 973 1,030 940 973 898 898 745	8 5 5 9 12 9 11 6 4 3 3 2 2 2 2 1 1 1 1 2 2 1 1 1	37 21 36 57 46 54 26 16 11 7 7 7 6 6 6 6 3 3 3 3 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568	July 4 5 5 6 4 5 5 6 5 5 2 3 3 3 2 6 6 5	13 6 10 16 23 11 10 4 25 7 4 5 3 11 8	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 59,300 16,900 7,310 5,100 4,500	1 1 2 1 3 3 4 109 506 252 116 87 141 1, 133 1, 146 262 97 58	2 2 3 2 5 5 11 19,800 6,190 1,500 1,500 183,000 12,000 1,910 799 948	1,700 1,580 1,490 1,760 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,730 962 1,010 973 1,030 973 1,030 973 1,030 973 1,030 973 1,703 973 1,703 973	8 5 5 9 12 9 11 6 4 3 2 2 2 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3 3 3 3 3 3
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568 592 692 613 888	July 6 4 5 5 6 5 7 2 3 3 3 2 6 5 4	13 6 10 16 23 11 10 4 a5 7 7 4 5	953 568 544 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 5,270 50,800 559,300 16,900 7,310 5,100 4,500 3,660	1 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133 1,146 262 97 78 78 78 56	2 2 3 2 5 5 11 11 512 19,800 6,190 1,500 155,000 183,000 12,000 1,910 799 948 544	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,370 1,260 1,370 1,260 1,230 1,120 1,120 1,180 1,230 962 1,010 973 1,030 940 973 898 745 785	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1 1 2 2 1 1 1 2 2	37 21 36 57 46 54 26 16 11 7 7 6 6 6 3 3 3 3 3 3 2 2 2 2
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568	July 4 5 5 6 4 5 5 6 5 5 2 3 3 3 2 6 6 5	13 6 10 16 23 11 10 4 25 7 4 5 3 11 8	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 59,300 16,900 7,310 5,100 4,500	1 1 2 1 3 3 4 109 506 252 116 87 141 1, 133 1, 146 262 97 58	2 2 3 2 5 5 11 19,800 6,190 1,500 1,500 183,000 12,000 1,910 799 948	1,700 1,580 1,490 1,760 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,120 1,120 1,120 1,120 1,120 1,120 1,730 962 1,010 973 1,030 973 1,030 973 1,030 973 1,030 973 1,703 973 1,703 973	8 5 5 9 12 9 11 6 4 3 2 2 2 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3 3 3 3 3 3
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1	784 666 744 616 692 640 705 788 544 744 1,190 826 718 744 666 532 520 568 592 616 388 496 556 666 604 604 508 840	July 4 55 6 4 55 5 6 55 5 4 3 2 6 5 4 3	13 6 10 16 23 11 10 4 4 5 7 7 4 5 3 11 8 4 4 4 3 9 7 7 3 1 3 1 3 1 1 8 1 8 1 8 1 8 1 8 1 8 1 8	953 568 544 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 59,300 16,900 7,310 5,100 4,500 3,600 3,600 3,600 3,600 3,600 3,600 3,600 3,010 2,590 2,310 2,030 1,890 1,890	1 1 2 1 2 1 3 3 4 4 109 506 252 116 87 141 1,133 1,146 262 97 58 78 56 36 36 36 28 22 18 13	2 2 3 2 5 5 11 11 512 19,800 6,190 1,500 155,000 12,000 12,000 1,910 799 948 544 293 196 137 99 66 43 97	1,700 1,580 1,490 1,760 1,890 1,820 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 1,120 1,180 1,230 962 1,010 973 1,030 940 973 1,030 940 973 898 745 785 785 785 716 679 669	8 5 9 12 9 11 6 4 3 2 2 2 1 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 1 2 2 1 1 1 1 1 2 2 1 1 1 1 1 1 2 2 1 1 1 1 1 1 2 2 1	37 21 36 57 46 54 26 16 11 7 7 7 6 6 6 6 3 3 3 3 3 3 2 2 2 2 2 4 2 2 2 2 2 2 2 2
1	784 666 744 616 692 640 705 784 798 544 744 1,190 826 718 744 666 532 520 568 592 692 692 696 696 696 696 696 696 696 6	July 4 6 4 5 5 6 5 5 2 3 3 3 2 6 6 5 4 4 3 2 4 1	13 6 10 16 23 11 10 4 4 5 7 7 4 5 3 11 18 4 4 4 4 4 3 9 7 7 3 3	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 55,270 50,800 55,270 50,800 50,800 50,800 50,800 50,800 50,800 50,900 16,900 7,310 2,030 3,600 3,600 3,000 3,	1 1 2 1 2 1 3 3 1 109 506 252 116 87 141 1,133 1,146 262 97 58 78 56 56 28 22 18 13 9	2 2 2 3 3 2 5 5 11 11 512 19,800 6,190 1,500 12,000 12,000 12,000 1,910 799 948 544 293 196 137 96 43 97 386,088	1,700 1,580 1,490 1,760 1,890 1,890 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 962 1,010 973 1,030 973 1,030 973 1,030 973 1,745 785 785 785 785 716 679 669 679 669	8 5 9 12 9 11 6 4 3 3 2 2 2 1 1 1 1 1 2 2 1 1 1 2 1 1 1 1	37 21 36 57 46 54 26 16 11 7 7 6 6 3 3 3 3 3 3 5 2 2 2 2 4 2 2 2 4 2 2 2 4 2 2 2 4 4 3 7
1	784 666 744 616 692 640 705 784 798 544 744 1,190 1,400 826 718 744 666 532 520 568 592 616 388 496 556 666 604 604 604 508 820 21,443	July 4 6 4 5 5 6 5 5 2 3 3 3 2 6 6 5 4 4 3 2 4 1	13 6 10 16 23 11 10 4 a 5 7 7 4 4 5 5 3 11 8 4 4 4 4 3 9 9 7 3 5 5 5 6 2 2 2 3 7 days).	653 568 544 616 616 616 617 966 1,130 1,220 994 938 1,740 14,500 9,100 4,800 3,680 5,270 50,800 5,270 50,800 7,310 4,500 3,600 3,600 3,600 3,600 3,600 3,600 3,600 3,100 4,500 4,500 1,500	1 1 2 2 1 3 3 3 4 4 4 1 1 1 1 1 2 2 1 1 3 3 1 1 1 1 1 1 1 1 1	2 2 3 2 5 5 11 11 512 19,800 6,190 1,500 183,000 12,000 1,910 799 948 544 293 196 137 99 66 43 97 386,088	1,700 1,580 1,490 1,760 1,890 1,890 1,890 1,580 1,490 1,370 1,260 1,230 1,120 1,180 1,230 962 1,010 973 1,030 973 1,030 973 1,030 973 1,745 785 785 785 785 716 679 669 679 669	8 5 9 12 9 11 6 4 3 2 2 2 2 1 1 1 1 2 2 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 1 1 2 2 1 1 1 1 1 1 2 2 1	37 21 36 57 46 54 26 16 11 7 7 7 6 6 6 6 3 3 3 3 3 3 2 2 2 2 2 4 2 2 2 2 2 2 2 2

a Computed from estimated concentration graph.

POTOMAC RIVER BASIN -- Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA. -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B bottom withdrawal tube; D, decandation; P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed

	Methods of analysis		BWMC	BN	BWMC	BWMC	BN	BN	BWMC	Z
		1.000	:	1	;	;	100	66	100	;
		0.500 1.000	:	100	100	;	8	86	8	;
		0.350								
	llimeters	0, 250	100	66	66	;	83	85	86	;
	ize, in mi	0, 125	86	95	86	001	85	91	86	
	dicated s	0.062	86	92	97	86	91	91	86	2
ediment	Percent finer than indicated size, in millimeters	0.004 0.008 0.016 0.031 0.062 0.125	94	84	82	97	87	81	94	ě
Suspended sediment	Percent fü	0.016	84	77	77	91	16	90	78	4
8		0.008	99	40	62	12	20	40	26	24
		0.004	48	55	8	38	23	18	32	23
		0.002								
	Concentration of suspension	analyzed (ppm)	3,560	1, 420	252	282	543	1,900	3,080	2.880
	g	of sample (ppm)		462	189	205	225	785	1,200	200
Water	tem- per-	ature (°F)								
	Discharge (cfs)		15,600	12,600	6, 590	6,800	6, 800	20, 700	61,300	61.300
	Time		6:50 a.m.	6:55 p.m.	7:45 p. m.	8:45 a. m.	8:45 a. m.	3:08 p.m.	8:26 p.m.	8:26 n m
í	Date of collection		Oct. 16, 1954 6:50 a.m.	Mar. 6, 1955	June 9	June 9	June 9 8:45 a. m.	Aug. 13	Aug. 18 8:26 p.m.	Aug. 18

POTOMAC RIVER BASIN--Continued

LINGANORE CREEK NEAR FREDERICK, MD.

LOCATION .-Temperature recorder at gaging station on left bank, 24 miles upstream from mouth, and 4 miles east of Frederick, Frederick County.
DALINGE AREA.-S.-3. square miles.
RECORDS AVAILABLE.-Water temperatures: October 1951 to September 1955.
EXTRANES. 1964-55.-Water temperatures: Maximum, 84°F Aug. 2, 3, 5, 6; minimum, freezing point on several days during January and February.
REVIRENES. 1951-55.-Water temperatures: Maximum, 88°F July 31, 1954; minimum, freezing point on many days during winter months.
REWARKES. 1951-65.-Water temperatures: Maximum, 88°F July 31, 1954; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1954 to September 1955

,	. 1	ı	ı																										,	1	ı
	September	min	66 8	88	67	69	69	69	65	<u>e</u> e	2 3	93	<u> </u>	E	@	69	89	64	3	90	3 %	**	25	59	28	19	62	63	;	 -	
	Sept	wew	2.0	8	70	72	72	23	69	22	<u>ē</u>	33	<u> </u>	3	<u>@</u>	10	2	0.4	: :	2.8	3 %	3 2	99	8	62	99	99	64	-	:	
	August	min	7.4	16	77	7.8	78	16	22	22	55	9 0	89	12	73	73	e (<u>a</u>) :	a (93	9	3	67	89	69	2	72	72	:	
	Aug	max	æ &	8	88	83	83	8	48	2 g	82	2 5	122	72	42	74	a	<u>a</u> 3	<u>)</u>	a 3	93	3	<u>=</u>	7.1	12	73	7.4	77	14	:	
	July	min		74	74	9.	74	72	22	77	72	: :	2 6	23	7.7	7.1	77	7.2	2 7	22	7 2	2 2	22	2.5	18	28	16	7.4	73	:	
	4	max	£ 8	8	8	82	78	82	92	==	82	9 5	- 6	82	92	88	82	\$ 6	3 :	6	3 4	3 8	88	7	8	82	18	4	79	=	
	June	nim	63	62	61	64	67	69	8	20.00	63	5 8	929	9	64	99	8	9 6	3	9 6	2 8	2 2	2 20	63	9	63	65	89	1	=	
/qd1	ř	max	89 67	2	23	16	48	52	69	8 8	96	5 8	8 8	8	73	36	92	72	2	2	9 6	2 2	: [69	69	23	16	92	:	:	
rmogra	May	mim	9 %	9	9	64	89	28	64	6 29	96	8 6	2 6	8	29	9	20	5.4	5	8	9 4	8 2	35	8	6.2	69	2	88	99	:	
ated the	М	max	67	67	11	74	7.1	69	69	63	65	8 9	9	67	10	68	63	992	?	4.6	1 6	- 6	2.2	44	28	72	43	72	20	:	
ol-actu	ril	min	F 62	52	20	49	25	48	45	51	54	6 6	3 23	98	57	26	22	86.	3	25	80	9 %	57	7	7.75	22	24	22	;	-	
yl alcol	April	max	5. 5.	28	22	56	53	22	25	62	65	20	2 2	15	99	61	28	66	5	62	2 6	5 5	8	24	2.0	63	9	99	;	,	
continuous ethyl alcohol-actuated thermograpb/	March	min	œ @	(e	41	4	43	40	33	4 4	52	2	48	49	49	46	44	44	;	46	? ₹	44	45	43	8	36	40	40	45	11	
continu	Ma	max	æ 3	e (21	2	47	43	4	48 51	53	3 3	£ 45	20	54	21	41	\$ 5	3	48	A 0	9 9	\$ 4	40	42	42	2	49	2	2.3	
hment,	lary	min	32	32											(a)						_							!	1	:	
e attac	February	max	2 2	8											(g)													;	;	:	
Recorder with temperature attachment,	ary	min	8 8	8	40	88	33	36	32	38	35	3 6	3 6	88	33	33	33	8 6	20	22 62	2 0	3 6	32		3 6	2	8	33	33	3.4	
with ten	January	max	39	: 7	43	4	41	33	36	37	37	9	4 6	34	34	34	33	34	3	8	3 6	3 6	32	ç		60	83	33	33	,5	
order	nber	uju	8 %	38	34	35	34	34	34	% %	35	4 6	6 8	88	38	37	37	6 6	;	3	5 3	5 6	5 5	9.4	4 5	2.	35	4	38	35	
/Rec	December	max	e	34	36	37	37	34	34	3.5 4.0	98	2 5	8 8	8	39	38	39	39	;	4.	* 5	* 7	3.	78	34	. 60	43	42	4	37	
	nber	mim	33	4	40	43	40	38	38	9 g	88	9 6	8 8	4	\$	43	41	2 20	3	\$:	# :	7 7	1 9	ş	8	8	40	38	;	7	
	November	max	4 4 5	2	43	42	44	43	43	4 &	42	2 :	2 4	#	43	47	2	22	5	24	2 7	‡ \$	42	14	4 4	4	42	9	:	73	
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	Octobe	max	73	7.	74	72	20	62	22	629	99	8 8	2 6	89	65	28	23		3	9	3 6	9 (22	8	9 9	5.4	53	21	48	9	
	, ac	6	1	4 67	4	5	6	7	8	10.	11	12	13	15.	16.	17.	18	19	20	21	22	23.	25	96	20.	98	29	30.	31	Average	

a Recorder stopped; range in temperature only from Feb. 4 to Mar. 3, Aug. 18-24; maxima 50° and 75°F, minima 33° and 69°F respectively during these periods. b Pen not marking; no range in temperature available.

POTOMAC RIVER BASIN -- Continued

ACCOTINK CREEK NEAR ACCOTINK STATION, VA.

LOCATION. --Samples taken at bridge on U. S. Highway 1, near Accotink, Fairfax County. DRAINAGE AREA. --37.0 square miles (at gaging station). REMMARS. --Samples taken from river surface. Records of discharge for Accotink Creek near Accotink station, Va., for water year October 1954 to September 1955 given in WSP 1382.

Chemical analyses, in parts per million, October 1954 to August 1955

Specific conduct-Hardness as CaCO_s Bicar-Chlo-Ni-Mean ance Turdischarge bonate ride (NO.) Date of collection Time (micro- pH Non-Calcium. bidity

		(cfs)	(HCO ₃)	(CI)	(NO _s)	magnesium	carbon- ate	mhos at (25°C)		
Oct. 6, 1954	10:15 a, m,	3, 0	37	9.2		24	0.0	101	7.0	6.2
Oct. 14	10:50 a, m,	2, 2	30	11	0.2	21	0	88.8	7.0	3.0
Oct. 21		1.3	23	9.0	.6	26	7	79.8	6.8	10
Nov. 4	10:15 a, m.	1.4	13	6.0	1.5	20	9	70.8	6.8	64
Nov. 19		, 6	17	5.0	.4	15	3	58.3	6.6	22
Dec. 20	1:17 p. m.	7.3	19	8.0	2.8	25	9	96.6	6.7	36
Jan. 25, 1955	10:25 a. m.	16	26	9. 2	3.0	54	32	99.5	7.1	20
Feb. 8		40	38	8.5				103	7.1	
Feb. 17		13	12	6.8	2.2	22	12	87.1	6.6	80
Mar. 3		9.1	18	11				101	6.8	
Mar. 10	10:30 a.m.	28	16	7.0	2.0	25	12	82. 9	6.9	91
Mar. 24	9:50 a. m.	42	18	4.8	2.0	26	12	79.9	7.2	71
Apr. 7	12:00 p. m.	14	20	6.4	.5	28	12	83.6	7.3	8.5
Apr. 28	11:00 a.m.	29	26	6.3	ا	22	1	82. 2	7.2	22
May 16	1:45 p. m.	17	26	6. 1		23	2	82.0	7.0	6.0
May 27	10:05 a.m.	16	25	6.1	~-	25	4	82. 2	7.0	25
June 6	10:15 a. m.	7.4	33	6.5		20	0	90.0	7.0	6.0
June 22	1:00 p. m.	9.7	26	5, 4		24	2.7	78.3	7.4	25
July 5	10:00 a. m.	5, 0	35	7.3		33	4	94.1	6.9	8.8
July 26	1:20 p. m.	4.6	16	5, 2		17	4	69.7	7.2	56
Aug. 4	11:00 a. m.	3, 0	36	12		26	0	108	7.0	11
Aug. 22		35	14	4.6		19	8	62. 1	6.7	52

POTOMAC RIVER BASIN--Continued

POTOMAC RIVER AT GUNSTON COVE, VA.

LOCATION.--At Gunston Cove, 2,000 feet south of APPR No. 1 site, Fort Belvoir, Fairfax County, Va.
DRAINAGE ARRA.--L1,560 quare miles (at gaging station near Washington, D.C.).
REMARKS.--Samples taken from river surface at predicted high and low tides. Records of discharge for Potomac River near Washington, D.C. for water year
October 1954 to September 1955 given in WSP 1382.

	Į.	bidity	22	; ;	79 66	36 62	35 9.5	32	28	: :	12	1 }	::
	þ	1	7.4	7.2	6.9	7.5	7.9	7.1	7.2	6.1	6.9	2.4	7.5
	Specific conduct-	(micro- mhos at 25°C)	1,070	1,320	193	236 341	281	223	213 196	281 241	197	185 171	180 173
	Total	Ity as H ₂ SO ₄	-										
	SSS CO	Non- carbon- ate	94	105	20 43	888	33	23	23	: :	30	11	::
	Hardness as CaCO,	Calcium, mag- nesium	180	204	100	85 83	108 95	8 8	88 88	::	83	1 1	11
	Dissolved solids (residue		589	11	121 267	11	167	132	126	11	131	11	1:
ber 1955	Ni-	(NO ₃)	2.0	2.3	5.0	9.7.	7.5	1.8	6.8	11	7.0	::	11
Septem	Fluo-	(F)	0.3	. 11		11	2, 79	2.1.	۰.۰.	1 1	4,4	11	::
r 1954 to	Chlo-	(CJ)	228	308	12 82	4 12	15	6.5	4.6	12	8.8	5.0	6.0
Octobe		(SO ₄)	74	11	36	: :	36	28 28	21	11	31	11	::
er year	Bicar-	(нсо³)	105	121	57 69	67	91 85	83	76 70	100	68 75	60	89
on, wat	Po- tas-	sium (K)	7.0	11	3.7	1 1	33	2.2	1.2	1:	2, 2, 8	::	::
Chemical analyses, in parts per million, water year October 1954 to September 1955	S	(Na)	130	11	8.6	11	13	7.1	5.7	1 :	5.0	::	
in parts	Mag- ne-	sium (Mg)	20 20	11	9.3	11	7.7	rc. 4. 22 e	0.4 0.4	11	4. °C.	11	11
alyses,	Cal-	(Ca)	988	: ::	27	11	31	27	26 26	11	24	::	::
nical an	Man- ga-	nese (Mn)	1 1	! !	11	11	9.0	11	.02	11	9.50	11	::
Cher	Iron	(Fe)	::	1 :	: :	: :	0.59	.41	. 43	11	.68	::	1:
	Alum-	(V)	0.0	11	7.7.	::	7.9.	77	1 1	11	::	::	::
9	Silica	(SiO ₂)	4.0	. ::	4. e. e. e.	11	6.1 5.0	5.2	5.7	::	4. 8. 8. 8	::	11
	Pre- dicted	tide stage	high low	high low	high low	high low	high low	high low	high low	high low	high low	high Iow	high low
•	Mean	(cfs)	1,090	1,370	12, 900	6, 380	3, 600	18, 800	* o*	18, 600	11, 100	18, 100	26, 200
50	Date of collection	Date of conscion	Oct. 6, 1954 2:01 p.m.	Oct. 14 8:40 a.m. 2:48 p.m.	9:35 a.m.	1:05 p. m	2:25 p.m 9:45 a.m	3:45 p.m. 10:00 a.m.	7:55 a.m	Feb. 8 9:00 a.m.	3:05 p. m.	2:45 p.m. 8:45 a.m.	4:10 p.m

POTOMAC RIVER BASIN--Continued

POTOMAC RIVER AT GUNSTON COVE, VA. -- Continued

		Tur- bidity	3	82	71 55	25	49	=======================================	. 42	24	30	30	8.8	37	50 20 20	9.0	11.7.5	19 24	172 60	25 20
		Hq	-	. 80	7.5	7.5	4.7	7.6		.0	7.3	0.7	7.5	o.	8.8	7.5	7.4	7.7	6.4.	7.7
	Specific conduct-	ance (micro- mhos at 25°C)	141	142	161	180	195	219	203	183	177	183	223	208	159	182	230 221	349 221	98	166 146
	Total	ity as H ₂ SO ₂																		
	ess 30,	Non- carbon- ate	ā	21	20	24	21	51 5		11	18	14	20	91	15	13	12	30 16	6 1 80	22 22
	Hardness as CaCO,	Calcium, mag- nesium	19	28	68	80	73	88	3 48	78	87	92	95	88	68	75	84	98	47	70
tinued	Dissolved solids	(residue on evap- oration at 180°C)	90.	100	; ;	;	;	1	511	101	;	:	;	:	11	125	131	146	101	110
55Con	-iz	trate (NO ₃)		. 4. 0. 62	3.5	4.0	4.5	; ;	8	1.5	1	1	1	}	; ;	1.	۱ %	17.	1.1	3.2
mber 19	Fluo-	ride (F)	-	7 87	1 1	~	87	1	- 2	~	1	;	:	1	11	17	¦ •9	¦ 9.	; es.	¦ 83.
to Septe	Сћю-	ride (CI)		3 65	8. 4 4. 4	6.0	8.4	4.2		4.0	5.4	4.6	6.0		8. 9. 8. 9.	4,4	30 4.6	23	1.9	2,5
er 1954	-InS	fate (SO ₄)	ءِ ا	23	; ;	;	;	1	22	23	;	1	1	;	1 1	22	27	: 22	: ន	16
Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	Bicar-	bonate (HCO ₃)	ū	4 5	8 8	8	2	16	3 6	7.5	*	92	82	2	55 58	20 20 20 20 20 20 20 20 20 20 20 20 20 2	88	95	46 37	88
water ye	Po-	Sium (K)	- 1	1.6	11	5.5	6.6	-		8.8	:	1	-	!	;;	12.	2.2	2.9	2.9	2.7
illion,	-òg	dium (Na)		4. 4.	::		_	:	тс 4	5.2	;	;	1	1	::	5.3	9.5	9.3	2.9	3.5
rts per n	Mag-	Sium (Mg)		- & - &	11	:	-	- 1		5.0	:	1	!	!	::	.4.	6.1	5.4	1.9	1 8.
in pa	Cal-	cium (Ca)	2	25	1 1	1	:	1	35	23	1	;	!	1	; ;	- 17	. 42	1 75	12	: 61
analyses	Man-	nese (Mn)	3	. 17	1 1	.01	. 02	1 :	8	.02	;	i	;	:	11	::	::	11	-::	::
emical	101	(Fe)	-	. 81	::	. 39	1.0	1	47	£.	;	;	1	:	11	.17	- 52	1 88 :	1 8.	11
ซื้	Alum-	inum (A1)		1 1	::	;	1	: :	0.0	. 1	;	1	:	:	::	;;	: 1	::	::	11
	Strion	(SiO ₂)		 	::	6.3	6.1	1		!	1	1	;	:	11	¦ 6.	¦ 6.	; * .	6.7	6.9
	Pre-	tide stage	1	low	high	high	low	high	i i	low	high	low	high	low	high low	high	high low	high low	high low	high low
	Mean	discharge (cfs)	37, 600	100	41, ±00	8, 880	200	700, 400	6,280		2, 400		3, 130	6.330		2, 690	1, 830	1, 640	42, 200	8, 540
		Date of collection	Mar. 10, 1955	3:10 p.m	7:05 a.m.	Арг. 7	2:00 р. ш	1:05 p.m.	May 16	9:35 a. m	May 27	7:15 a. m	8:40 a.m	3:40 p. m.	9:45 a.m. 4:20 p.m.	July 5	July 26 1:30 p. m 8:05 a. m	Aug. 4	Aug. 22 11:05 a.m. 4:45 p.m	Aug. 30 6:10 p.m. 1:00 p.m.

	35	32			
7.3	7.5	7.5	7.7	7.7	8.6
205	199	226	196	256	215
16	18	13	15	16	13
68	98	96	84	109	84
;	171	;	175	;	143
-	5.2	;	1.1	;	1.1
;	۲.	;	۲.	;	1.2
5.0	6.0	7.0		8.0	5.4
- 1	13	ł	20	1	21
88	83				
	2.6	1	2.7	1	2.6
1	4.8	;	5.0	;	6.0
1	5.2	}	5.3	1	5.8
-	26	:	22	;	28
;	1	;	;	;	;
1	.37	1	;	1	1
;	-	ļ	;	;	. 15
- 1	6.7	!	3.1	1	Τ.
high	low	high	low	high	low
5,880		4,230		4,040	
Sept. 9, 1955	8:10 a. m	7:40 a. m.	1:55 p. m	Sept. 26	9:28 а. ш

POTOMAC RIVER BASIN--Continued

POTOMAC RIVER AT FORT BELVOIR, VA.

for water ن of discharge for Potomac River near Washington, D. LOCATION.--At Fort Belvoir, Fairfax County, 400 feet offshore from point 300 yards below U. S. Bureau of Fisheries dock. DRAINAGE AREA.-11,660 square miles (at gaging station near Washington, D. C.). REWARKS.-Samples taken from river surface at predicted high and low tides. Records of discharge for Potomac River near year October 1954 to September 1955 given in WSP 1382.

Tur-bidity ; ; 33 42 38 36 28 28 28 8.8 2.3 7.2 7.7 7.6 4.5 펁 Specific conduct-(micromhos at 25°C) ance ,660 814 279 167 248 216 312 217 203 276 281 2 2 ity as H₂SO, Total acidcarpon-Non-38 25 8 2 15 34 39 23 : : 2.2 ! ! Hardness as CaCO, Calctum, mag-nesium 260 73 43 22 Dissolved solids (residue at 180°C) on evaporation 174 36 53 in parts per million, water year October 1954 to September 1955 Ni-trate (NO₃) 3.0 3.0 6.2 : : Fluo-ride (F) 4 4 6 1 1 4 0 -: -: : : 1 1 그 그 6.5 5.0 음 <mark>분</mark> (5) 302 325 Sul-fate (30₄) 8 8 : : 338 : : 33 2 23 88 1.1 22 1 1 (HCO₃) Bicar-bonate 88 2 2 88 20 60 99 88 2 2 62 62 3.6 2.0 2.1 2.7 Po-tas-sium (K) : : 1 1 1 1 So-dium (Na) 20 5.3 1 1 :: ; ; 174 5.1 5.2 Mag-ne-sium (Mg) : : 28 Chemical analyses, Cal-cium (Ca) : : 33 : : 21 19 : : 393 26 24 25 1 1 23 Man-ga-nese (Mn) 932 : : 1 1 1 1 1 1 2 2 : : 28 1 1 0.63 o. 8 ; ; Iron (Fe) ; ; : : ; ; 1 1 .53 2.8 Alum-inum (Al) : : : : Silica (SiO₂) 8.4 2.4 Pre-dicted tide stage high Iow high low high low high Iow hgh o high low high low pig. d and Mean discharge (cfs) 1,090 1,370 12,900 6,380 3,600 4,640 19,600 19,100 18,800 11,100 3:15 p. m..... Nov. 4...... 1:33 p. m.... Nov. 19..... 2:50 p. m..... 9:30 a. m. Date of collection Dec. 20 4:08 p. m. .. 10:22 a. m. .. Jan. 25, 1955. 8:20 a. m.. Oct. 21 3:30 p. m. 2:23 p.m. 9:07 a. m. 9:00 a. m. 8:40 a.m. 10:05 a. m. 3:50 p.m.

11	85 112	176 182	38 41	18 13	20 21	78 78 78	9.6 12	30	8.0 11	17 9.4	18 9.2
7.3	9.9	7.6	7.5	7.7	2.7.	7.2	7.5	8.7.	4.7.	6.8	7.3
182	139	191	179	219	185	197	234	161	176	233	303
11	21	19	24.22	17 81	21	15	118	15	33	19 19	20 23
	98	72 61	88	8.8	 18 88	48 68	100	0.0 64	88	28	88
	101	11	113	::	106	11	11	::	11	11	::
::	4; 4; 8: 8:	4, 4, 5, 5,	4, 4, 2, 25	1 1	1.5	11	::	::	1.1	11	11
::	0.1	11	7.7	1 1	4	11	11	11	11	11	11
5.0	6, 5, 8, 4,	9 6	44	4, ti 8 8	3.5	5.5	6, 6, 5, 53	8, 8, 8, 4	5.0	41 8.8	31
11	18	11	23	::	25	11	11	1 1	11	11	
62	4 4	61 51	68 78	8 8	4.48	92	94 101	7.49	8 7	8 %	97
	1.8	11	- 6.1	::	22.0	11	::	11	!!	11	
!!	29 29 72 44	11	eğ itçi	1 1	5.5.	11	1 ;	11	::	11	
	80 80 80 80	11	;;	11	5.5	;;	11	::	::	11	
::	118	11	;;	::	24	: :	::	::	::	11	::
1 1	0.13 .17	11	.00	1 1	8	11	11	! !	1;	: :	11
11	0.01	11	.55	1 1	. 39	11	11	11	11	11	11
::	8.8		11	11	9.9.		11	11	11	11	
;;	6.8	11	5.5	1 1	3.5	11	11	11	11	11	! !
high low	high low	high low	high low	high low	high low	high low	high low	high low	high low	high low	high low
28, 200	31, 600	91, 400	8,880	28, 500	6,280	5,400	3, 130	6,330	2,690	1,830	1,640
Mar. 4, 1955 4:30 p.m. 11:05 a.m.	Mar. 10 8:55 a. m 3:35 p. m	Mar. 24. 7:45 a.m. 2:40 p.m.	Apr. 7 8:00 a. m. 2:30 p. m.	Apr. 28 1:25 p.m. 7:55 a.m.	May 16 3:30 p. m 10:10 a. m	May 27. 1:15 p. m. 7:45 a. m.	June 6	June 22 10:30 a. m. 4:45 p. m.	3:45 p. m.	2:00 p. m. 8:35 a. m.	Aug. 4 8:35 a.m. 3:30 p.m.

POTOMAC RIVER BASIN--Continued

POTOMAC RIVER AT FORT BELVOIR, VA. -- Continued

	Tur- bidity		123	128		23	45	•	2	8	9	2	4		36	47
	Hq		5.	8.		4.9	8.		2	7.	-	*	7.5		6.	7.8
	Specific conduct- ance (micro- mbos at 25°C)		121	130		174	192	ò	202	210		213	240		240	270
	Total acid- ity as H ₂ SO ₄															
	CO. Non- carbon- ate		a	80		12	23	:	11	14	;	7	22		20	17
	Hardness as CaCO, Calcium, Nunge car		54	54		7.	82	;	130	88	;	5	109		110	114
ntinued	Dissolved solids (residue on evap-oration at 180°C)		;	;		;	;		;	;		;	;		:	:
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	Ni- trate (NO ₃)		!	!		;	!		1	!		1	:		1	
tember 1	Fluo- ride (F)		1	;		:	;		;	1		;	;		:	!
4 to Sep	Chlo- ride (Cl)		9.0	1.6	_	8	4.2		٠	4.0		9	7.0		7.0	8.0
ser 195	Sul- fate (SO ₄)		;	i		:	1		;	;		1	:		;	:
ar Octo	Bicar- bonate (HCO _s)		22	26		2	8	3	5	8	8	20	102		110	118
water ye	Po- tas- stum (X)		!	1	_	;	1		;	1		!	:		1	:
aillion,	So- dium (Na)		1	;		1	:		:	1		;	1		!	-
rts per n	Mag- ne- stum (Mg)		:	!		:	:		1	;		;	;		;	:
s, in par	Cal- cium (Ca)		1	!		:	:		!	!		1	;		!	
analyse	Man- ga- nese (Mn)		;	;		;	;		:	1		;	:		{	:
emical	Fron (Fe)		;	;		;	;		:	1		i	:		:	-
ວັ	Alum- inum (Al)		1	ł		;	:		;	1		:	;		:	:
	Silica (SiO ₂)		;	;		:	;		:	1		;	:		;	:
	Pre- dicted tide stage		high	MOI		high	No.	1	ugu	low	1	ugu	low		high	low
	Mean discharge (cfs)	42,200			8,540			5,880			4, 230			4,040		
	Mean Mean Bate of collection discharge did (cfs) et	Aug. 22, 1955	11:25 a. m	5:10 p. m	Aug. 30	6:25 p. m	1:30 p. m	Sept. 9	1:40 p. m.	8:30 a. m	Sept. 15	0:00 tr. III.	2:25 p. m	Sept. 26	3100 p. m	9:46 a. m.

POTOMAC RIVER BASIN--Continued

POTOMAC RIVER AT FORT WASHINGTON, MD.

Records of discharge for Potomac River near Washington, LOCATION: --At Fort Washington, Prince Georges County, Md., 5 miles upstream from Fort Belvoir, Va. DAAINAGE ARBA.--11,500 equare miles (at gaging station near Washington, D. C.). REMARKS. --Samples taken from river surface between buoys 79 and 80 at predicted high and low tides. D. C., for water year October 1954 to September 1955 given in WSP 1382.

	Tur- bidity	·	:	3 8	:	:	70	76	S	3 8	3	35	7	30	8	;	\$ 8	2	;	;	41	30	;	:
	Нď		3	 	7.2	Z.	7.1	7.3	9		?	8.2	8.2		.63		. c	:	7.4	9.7	7.0	7.1	7.4	7.3
	Specific conduct- ance	mhos at 25°C)	697	404	9	477	167	163	999	4 4 6	2	279	275	109	18	į	215	1	280	287	177	177	178	176
	Total acid- itv as	H,SO.													-									
	0.5	non- carbon- afe	ş	33	25	æ	8	2	8	8 8	3	33	8	8	2 82		8 8	3	1	1	19	83	1	:
	Hardness as CaCO,	Calcium, mag- nestum		118	148	124	92	2	2	# 0	8	108	114	7.4	72	į	20.0	3	;	;	89	73	;	;
5	Dissolved solids (residue	oration at 180°C)	6	248		:	115	111		:	;	171	164	-	115	ç	123	700	;	;	127	. 116	1	i
Chemical analyses, in parts per million, water year October 1954 to September 1955	Ni- trate	(NO ₃)		4.0	4.1	6.5	5.8	6.0	:	1	ř.	6.0	8	ur.	5.5	í	0.0	;	;	;	8.9	6.1	:	;
Septen	Fluo-	(F)	,	. 64	;	1	7	Τ.		:	1	63	~!	01			-! -	:	;	;	~	€.	;	;
r 1954 to	Chlo- ríde	(C1)		3 2	55	2	4.2	4.0	•		9.	13	9.4	ĸ	5.5		4, r.	7.	8.0	9.2	5.0	4.2	5	5.0
Octobe	Sul- fate		;	\$ 8	;	i	23	22		1	1	34	36	99	18	!	5 8	3	;	;	20	23	;	1
ter year	Bicar- bonate	(нсо _{з)}		104	103	104	57	54	Ē	7.0	2	92	86	9	99	í	78	5	108	112	19	5	90	92
ion, wa	Po- tas- sium	(K)	,	. e.	:	1	6 7	3.7		:	:	3.6	3.5		6.		4. 0	?:	1	;	4.2	2.2	-	1
per mill	So- dium	(Na)	;	322	:	:	7.	4.3		!	:	=	10	r.	. 8.	,	eo a	9	1	;	5.8	4.4		:
in parts	Mag- ne- sium	(Mg)	,	. 9.	;	;	23	3.5		1	;	6.9	7.8	•					;	;	6	4.3	;	• :
alyses,	Cal- cium	(Ca)	;	8 8	;	;	20	18		:	;	32	33	66	12	;	8 6	8	!	1	21	22	!	!
nical an	Man- ga- nese	(Mn)		; ;	:	1	;	;		:	:	0.00	8		: :	;	5 6	3	1	;	.03	Π.	;	:
Che	Iron (Fe)	,		: :	1	1	1	1		:	:	0.93	.41	4	. 98	i	5. 4	?	-	1	79	.59	-	·
	Alum- inum	(¥)		90.	:	1	67	ن		!	!	٥.	0.	•	? =:		1 :	;	;	1	;	:	:	1
	Silica (SiO.)		,	4. 80.	;	;	75	7.		:	:	5.7	9.	u u	9.0			;	;	;	5.0	4.5	i	:
	Pre- dicted tide	stage		ng Mo	high	Jo Mo	high	8	1	100	MOT	high	low	high	Jow No.		high Jour	*O	high	low	high	low	high	Not.
	Mean di	(cis)	1,090		1,370		12, 900		6, 380		3.600			18,800		4, 640		19 600			11,100		19, 100	
	Date of collection		Oct. 6, 1954	9:35 a.m.	Oct. 19	3:35 p.m.	Oct. 21	10:30 a.m.	Nov. 4.	6:00 p. m	Nov. 19	3:15 p.m	10:50 a.m	Dec. 20	10:47 a.m.	Jan. 25, 1955	9:00 a.m.	Feb 8	10:05 a.m.	3:40 p.m	3:55 p.m.	10:15 a.m	Mar. 3	9:45 a.m.

POTOMAC RIVER BASIN.-Continued POTOMAC RIVER AT FORT WASHINGTON, MD.--Continued

. ا	. 1		_				_		, -11			* =	0 6		
Tur- bidity	_	- 22		_	2.4		** 	19 18	24						113
Hd		6.9	.5.			7.7	: 	7.3	7.1	4.0	20 F.	. T.	r- r-r rc ec	4.6	٠. دن دن
Specific conduct- ance (micro-	mhos at 25°C)	137	152	# CT 1	208	192	CAT	205 205	232	222	171	193	198 248	255 264	129 137
Total acid- ity as	H,SO,							_							
ess CO ₃		18	2 7 2	8 2	772	17	a†	15 20	22	4.	£ £ ;	41	12 12	16	11
Hardness as CaCO,	mag- nesium	9 5	8 88	5 8	91	4.0	20	8. 90	98	68	27 8	83 88	2,5	96	57
Dissolved solids (residue on evan-	oration at 180°C)	93	; ;	: :	133		:	110	11	!	: :	136	1 1	1 11	
Ni- trate	ĵ.	4. 4 0. a		, ,	9 60	!	:	4.5	;;	:	1 1	1.9	: :		11
Fluo- ride		0.2	! ;	٠ -		1	1	.; v;	11	:	: ; —	: =	1 1		!!
Chlo-	<u> </u>	63 64 65 64	4.0	7 4	4. 4.	6.3	». 	4.5	6.0	6.2	. e.	5. 2.	r. 0.	91	2.3
Sul- fate (SO.)		19	} ;	; ;	79	;	;	22 22	;;	;	! !	ដ	1 1	: ;; 	;;
Bicar- bonate	6211	51	. 25		- 68	85	5	8 2	85	104	27 21	8 48	8 8	98 103	52
Po- tas- sium	Œ	1.6	: 1		7.3		!	2.0		!	: :	2.2	: :	1 11	::
So- dium (Na)	(mar)	60 C	} 	: 	_	!	!	5.5		!	1 1	6.5	: :		
Mag- ne- sium	(Mg)	 	; 	i 	! :	!	:	5.0	::	!	1 1	5.6	1 1		::
Cal- clum		81 25	;	;	; ;	;	;	24 26	; ;	;		: 42	; ;	; ;;	
Man- ga- nese	(Mn)	0.09	: :	: 8	8 4	ł	;	8.8	1 1	1	1 1	1	1 1	: ::	11
Iron (Fe)		0.82	: 1	: 2	. 6	1	:	.33	1 1	1	1 1	.37	1 1	: ::	11
Alum- inum (A1)	Ì	1 7	1	:	: :	i	: :	0.0	: :	;	: :	: :	1 1	: ::	: :
Silica (SiO ₂)		4.6	; ;	; ;	5.1	- 1	!	3.0	1 1	;	: :	1.7	: :		11
	s lage	high	hgh.	Mo :	nign low	high	Mor	high low	high	lgh.	low high	low high	low high	high low	high low
Mean discharge (cfs)	(4.15)	37, 600	91, 400	8,880		29, 500	6, 280	•	5, 400	3, 130	6, 330	2,690	1,830	1,640	42, 200
Date of collection		Mar. 10, 1955 9:15 a.m	Mar. 24 8:10 a.m.	Apr. 7	3:05 p.m.	Apr. 28	8:20 a.m. May 16	3:55 p.m.	May 27 1:35 p.m.	June 6	4:35 p.m. June 22	July 5	4:20 p.m. July 26	Aug. 4	Aug. 22

88	္က	ě	9	54		34	56		ಜ	22
7.5	7.8	-	ř.	7.2		7.3	7.4	_	7.7	7.4
		213	_					_		_
14	2	=	:	14		12	21		18	16
83	82	90	3	91		100	108		114	119
1	134			174		1	194		:	181
	5		:	3.2		1	9.0		:	7.0
1	0.3		!	=:		!	=		;	.2
3.5	2.4	9	;	6.4		7.0	8.0		8.0	7.0
1	:		:	77		:	22		1	27
84	98	5	2	94		108	106		117	126
	2.6		;	2.9		1	ć.		:	2.8
:	4.0		_	5.6		1	8.7		:	91
;	4.9		;	5.7		1	7.5		;	8.3
1	26		!	27		;	31		1	34
;	:		!	1		:	;		!	;
1	;		;	0.70	_	;	.33		;	.14
-	;		!	;		;	:		1	;
:	8.2		:	7.0		1	4.2		;	:
high	low	1011	11811	low		high	low		high	low
8,540		5,880			4, 230			4,040		
Aug. 30, 1955	2:00 p.m	Sept. 9	5.00 p. III.	8:55 a.m.	Sept. 15	8:15 a.m.	2:40 p.m	Sept. 26	3:25 p.m.	10:12 a.m.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

POTOMAC RIVER BASIN -- Continued

POHICK CREEK AT POHICK CHURCH, VA.

 $\hbox{LOCATION.--Samples taken at bridge on U. S. Highway 1 at Pohick Church, Va.REMARKS.--Samples taken from river surface. } \\$

Chemical analyses, in parts per million, water year October 1954 to September 1955

Date of collection	Time	Bicar- bonate (HCO ₂)	Chlo- ride (Cl)	Ni- trate (NO ₉)	Hardr as Ca Calcium, mag-		Specific conduct- ance (micro-	р Н	Turbidity
		(11003)	(61)	(1123)	nesium	ate	mhos at 25°C)		
Oct. 14, 1954	11:01 a.m.	16	7.5	0.6	16	3	62, 4	6.9	3
Oct. 21		0	10	. 4	21	0	129	4.0	3
Nov. 4	10:20 a. m.	18	7.0	1.7	27	7	81, 8	6.9	5 5 3
Nov. 19		24	7.0	. 5			76.8	6.7	5
Dec. 20	1:10 p. m.	16	5, 0	. 5	22	8	76.6	6.9	3
Jan. 25, 1955	10:30 a.m.	21	6,8	1.0	34	17	67.3	7.2	4
Feb. 8		8	5, 0			Í Í	68, 0	6.3	-
Feb. 17		14	5, 1	.4	17	6	67.1	6.8	48
Mar. 3		16	6.0				71, 1	6.9	
Mar. 4	11:45 a, m,	15	5, 0) }	70, 2	6.9	
Mar. 10	10:35 a, m.	14	5.4	1.0	18	7	65,2	7.0	8
Mar. 24	10:00 a, m.	12	3.6	1.2	17	7	59.3	7.4	45
Apr. 7	12:00 p. m.	19	3.9	.3	16	0	59.6	7.5	5
Apr. 28	10:50 a, m,	15	4.1		16	4	59.9	7.2	40
May 16	1:55 p, m.	16	4.9	. 5	17	4	61,6	6.9	4
May 27	10:15 a.m.	20	3.4		18	2	59.8	7.0	4
June 6	10:25 a.m.	24	7.0		14	0	62.1	7.2	6
June 22		24 ,	2.9		16	0	57.5	7.5	45
July 5	10:10 a, m,	27	5, 0		30	8	67.0	7.1	9
July 26	1:30 p, m.	26	5, 1		16	0	66.2	7.5	2
Aug. 4	11:05 a.m.	29	6.2		20	0	73.6	7.2	1
Aug. 22		15	4.7		15	3	62.4	6.9	4
Aug. 30		21	4.3		14	0	59.7	7. 5	6
Sept. 9	10:30 a.m.	27	5.0		18	0	65.0	7.0	4 2
Sept. 15	11:10 a.m.	25	6.0		18	0	59.7	7.1	
Sept. 26	11:25 a.m.	24	6.0		24	4	60.5	7.2	3

POTOMAC RIVER BASIN -- Continued

POTOMAC RIVER AT GLYMONT, MD.

LOCATION .--At Glymont, Prince Georges County, 4 miles from Fort Belvoir, Va., and 1½ miles upstream from Indian Head, Md.
DRAINAGE AREA.--Li 560 square miles (at gaging station near Washington, D. C.).
REWARKS.--Samples taken from river at predicted high and low tides. Records of discharge for Potomac River near Washington, D. C., for water year
October 1954 to September 1955 given in WSP 1382.

	١ .	bidity	15	22	34	=	84	99	5	2 8	3	92	88	ě,	4 5	ę	3 28		:	;	20	23	;	;
		Hd	7.4	4.	7.1	7.1	7.0	7.0		::	:	7.2	8.1	4 4	7.5	6		,	4.		7.3	0.2	7.4	7.3
	Specific conduct-	micro- mhos at 25°C)	1,450	1,860	2, 600	1, 700	205	215	946	200	089	472	308	998	224	tuo	នីនី		218	\$12	243	225	187	187
	Total	ity as H,80,																						_
	ss.	Non- carbon- ate	130	169	260	160	18	24	ď	2 2	3	49	39	3	3 %	6	2 4		;	;	29	စ္တ	;	
	Hardness as CaCO	Calcium, mag- nesium	218	257	340	240	99	2		101	2	117	108	4	8		8 8		!	!	94	06	;	:
5	Dissolved	on evap- oration at 180°C)	807	1,040	ŀ	:	137	142		: 1	1	262	188	144	134	3	126		:	;	150	138	;	;
Chemical analyses, in parts per million, water year October 1954 to September 1955	Ni-	trate (NO ₃)	1.5	2.5	æ,	2.2	4.5	4.8	9	9 9	9	5.2	4.5	ď	6.5	b	9.9		:	;	6.2	8.8	ł	:
Septen	Fluo-	ride (F)	0.1	=	:	1	~!	-:		:	:		87	·	? -:	•	: -:		;	;	83	8	;	:
r 1954 to	-оічэ	agi G	352	465	400	418	12	18	9	0 8	8	73	24	-	2.2	5	9.0		85	<u> </u>	::	8.0	5.0	2.0
Octobe		fate (SO ₄)	92	112	;	:	24	32		;	:	45	31	4	2 5	å	3 %		;	:	88	32	:	:
ter year	Bicar-	bonate (HCO ₃)	107	107	98	94	28	22	ę	2 2	5	82	84	ā	2 62	;	28		102	86	62	74	8	99
lion, wa	Po-	Sturn (K)	10	=	:	1	3.6	3.7		!	:	4.9	3.9	-	2.2		1.2		1	;	2.9	8.8	;	:
per mil	.0g	divin (Na)	198	265	1	1	::	12		!	!	43	14	1	7.7		6.3		:	!	9.5	7.1	;	!
in parts	Mag-	Sium (Mg)	88	37	1	;	2.3	3.9		:	:	10	7.8	ď	2.5		5.0		;	:	6.4	5.5	;	:
alyses,	Cal-	Ca)	14	42	;	1	22	21		;	:	30	8	46	8	i	52		!	;	27	21	1	;
mical ar	Man-	nese (Mn)	;	1	;	1	;	1		1	\	9.0	8	1	: :	;	38		:	;	80:	90.	;	:
Che	Iron	(Fe)	:	1	1	!	;	;		1	!	99.0	87.	2	. 25		8 8		1	!	96	.75	;	1
	-uniy	inum (Al)	0.1	٥.	1	1	69	۲.		;	:	7.	Ξ.	•	: 0.		! !		:	;	1	ł	}	1
	Silico	(SiO ₂)	0.2	w,	;	!	4.0	4.0		;	ł	5.2	9.9		20.0	,	2.6		:		3.8	3.7	;	:
	Pre-	tide	high	low	high	low	high	low	1	ugu S	MOT .	high	low W	4	low	:	ngn low		high	No.	high	low	high	low
	Mean	discharge (cfs)	1,090	000	1, 370		12, 900		6,380		600	·		18,800		4,640		19,600			11,100		19, 100	-
		Date of collection	Oct. 6, 1954 8:15 a.m.	1:37 p.m.	8:10 a.m.	2:28 p.m.	3:00 p.m	9:15 a.m	Nov. 4	7:30 p.m.	Nov 19	1:55 p.m.	8:43 a.m	Dec. 20	9:40 a.m.	Jan. 25, 1955	2:30 p.m.	Feb. 8	8:20 a.m.	2:30 p.m.	2:50 p.m.	9:15 a.m	Mar. 3	8:30 a.m.

POTOMAC RIVER BASIN--Continued POTOMAC RIVER AT GLYMONT, MD.--Continued

Tur-bidity ... ¥ 225 7 7 22 28 82 7.4 품 (micro-mhos at 25°C) 138 169 222 226 181 191 206 221 163 163 173 233 355 24 £ 5 Total acid-ity as H₂SO₂ carbon-ន្តន 13 13 122 8 8 128 13 18 Hardness as CaCO Calcium, mag-nesium 59 54 73 97 82 883 88 88 69 22 202 on evap-oration at 180°C) Dissolved solids residue :: 1-1 :: 88 : **8**; 23 28 : : 55 water year October 1954 to September 1955 -- Continued Ni-trate (NO₃) 0.4 8 0 : : 1 : : : : : : : Fluo-ride (F) : : 4 1-1 1: : : : : 음 다 다 (고 4. 4. Sul-fate (SO₂) : : 88 ¦ \$! 7 ; 8 2 : : ន្តន : : 2 23 : : 1.1 1.1 Bicar-bonate (HCO₃) 9 == 23 8 28 98 64 128 88 828 54 63 53 88 94 3.1 2.0 Po-tas-sium (K) 1.8 : : 11 1 1 4: 1 £ : : : 1 1 1 : 5.3 8.8 : : 1 1 So-dium (Na) 1 1 : : : : in parts per million, 1.8 3.8 : : : : 1 1 Mag-ne-stum (Mg) 1.1 : : : : Cal-ctum (Ca) 2 2 ! ! 1 1 : : : : : : : : 8 1 28 œ : 1.1 2 2 Chemical analyses, : : : : 1 1 Man-ga-nese (Mn) 4 5 88 1 1 82 : : 1 1 : : 1 1 :: 1 1 2 1 Fron (Fe) 0.97 5 8 : : 88 1 1 : : 1.1 Alum-inum (Al) 0.0 : : : : : : 1.1 :: 1 1 1 1 : : 1.1 1 1 1 1 Silica (SiO₂) 4: 1 0.0 2.2 : : ۹ : : : : : : : 1 : 1 1 Pre-dicted tide stage high ow nigh low ugh ow high ow high low high Iow dg № igh wo dg & iigh 04 dgh ow Mean |r discharge (cfs) 26, 200 29,500 42, 200 37,600 91,400 5, 400 3, 130 6,330 2,690 1,830 1,640 8,800 8, 280 2:45 p.m. July 26 1:10 p.m. Mar. 10 8:10 a.m. 2:50 p.m. Mar. 24 6:45 a.m. 1:35 p.m. Apr. 7 1:36 a.m. 1:36 p.m. Apr. 28 7:240 p.m. 7:05 a.m. 2:45 p.m. 2:45 p.m. 8ay 27 12:28 a.m. 3:10 p.m...... June 22 9:30 a.m..... 4:00 p.m. July 5 10:00 a.m. 6:50 a.m. 3:45 p.m.... Date of collection Mar. 4, 1955. 4:30 p.m.

,	-	4		es	43		4			8	7
_	_	4.8.7		_	7.8			7.3 20	_	7.7	
-	<u>-</u>	-	_	-	-		-	-	_	-	-
;	162	173		202	202		204	215		236	244
	=	14		18	17		28	19		12	27
;	99	74		85	94		100	94		106	107
	:	1		;	;		;	;		:	:
_	;	:		1	;		;	:	-	;	:
	;	:		1	:		1	;		;	:
		2.8		5.0	4.0		0.9	7.0		7.0	7.0
	;	:		1	;		;	;		;	:
	67	73		8	94		88	85		Ξ	105
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_	:	!		!	;		;	;		!	:
	!	:		1	!		;	;		1	:
	high	low		high	low		high	low		high	low
8,540			5,880			4,230			4,040		
Aug. 30, 1955	2:50 p.m.	12:29 p.m.	lept. 9	1:00 p.m	7:40 a.m.	Sept. 15	7:10 a.m	1:35 p.m	lept. 26	2:21 p.m	9:07 a.m.

RAPPAHANNOCK RIVER BASIN

HAZEL RIVER AT RIXEYVILLE, VA.

LOCATION.--At gaging station at bridge on State Highway 229, 0.4 mile upstream from Waterford Run, 1.1 miles northeast of Rixeyville, Culpeper County, 2.8 miles downstream from Thornton River, and 9.1 miles upstream from mouth. DRAINAGE AREA.--286 square miles.

RECORDS AVAILABLE. -- Chemical analyses: October 1945 to September 1946, October 1951 to September 1952.

September 1952.
Water temperatures: October 1951 to September 1955.
Sediment records: October 1951 to September 1955.
EXTREMES, 1954-55.--Specific conductance: Maximum daily, 61.9 micromhos Oct. 13; minimum daily, 32.2 micromhos Aug. 18.
Water temperatures: Maximum, 88°F Aug. 3; minimum, freezing point on several days in December, January, and February.
Sediment concentrations: Maximum daily, 639 ppm Aug. 13; minimum daily, 1 ppm Oct. 1, 2 12 Nov. 8 16.

2, 12, Nov. 8, 16. Sediment loads: Maximum daily, 34,700 tons Aug. 18; minimum daily, less than 0.5 ton

Sediment loads: Maximum daily, 34,700 tons Aug. 18; minimum daily, less than 0.5 ton on many days.

EXTREMES, 1951-55.--Water temperatures: Maximum, 88°F Aug. 3, 1955; minimum, freezing point on several days during winter months.

Sediment concentrations: Maximum daily, 1,063 ppm Mar. 1, 1954; minimum daily, 1 ppm on several days during most water years.

Sediment loads: Maximum daily, 34,700 tons Aug. 18, 1955; minimum daily, less than 0.5 ton on many days during each year.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

rature (° FA of water water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	40	38	33	34	50	52	64	65	72	80	70
2	74	42	39	38		49	55	58	62	85	85	68
3	70	40	35	39		49	51	66	65	85	88	67
4	80	40	34	40		50	55	65	60	85	86	67
5	73	42	34	40	32	50	56	65		84	83	67
6	70	40	33	42	33	45	51	65	65	80	86	74
7	65	39	34	40	34	41	51	60	70	80	78	68
8	46	38	32	41	33	38	54	65	67	78	74	65
9	60	40	34	35	38	44	54	60	60	80	70	64
10	60	39	32	33	35	46	54	62	60	78	67	70
11	59	34	34	38	41	51	54	63	65	78	74	67
12	64	38	32	32		54		64	67	70	73	66
13	65	44	32	33	33	55	56	64	68	75	68	68
14	65	38	35	36		52	55	59	66	80	68	58
15	60	40	39	35	32	49	57	60	70	73	75	62
16	59	40	39	34	36	55	65	60	68	85	72	65
17	55	45	35	33	40	51	57	60	67	86	74	69
18	50	49	38		36	51	54	57	75	77	71	70
19	50	52	39	37	35	47	55	59	69	83	67	68
20	48	55	33	35	37	44	58	64		83	72	68
21	48	52	32	34	37	47	58	60	71	84	70	64
22	48	42	38	37	43	51	60	69	67	80	71	65
23	48	40	35	32	46	49	65	6 8	70	80	71	61
24	48	42	33	35	40	51	67	68	69	80	70	60
25	49	40	35	32	35	47	60	76	70	80	70	64
26	50	40	33	32	36	47	67	69	68	79	71	60
27	55	39	38	32	42	39	55	69	72	85	70	58
28	50	37	40		48	47	54	72	70	80	72	62
29	50	40	45			42	57	73	77	78	72	60
30	50	39	45			49	60	70	.75	80	74	64
31	46		40	32		49		66		75	72	
Aver- age	58	42	36	36	37	48	57	65	68	80	74	65

RAPPAHANNOCK RIVER BASIN

RAPPAHANNOCK RIVER BASIN -- Continued

HAZEL RIVER AT RIXEYVILLE, VA .-- Continued

Suspended sediment, water year October 1954 to September 1955

							nber 1955		
	1	October			November			December	
		Suspender	sediment		Suspende	d sediment		Suspende	d sediment
D	Mean	Mean		Mean	Mean		Mean	Mean	r
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
			4)	100			141		
1	3, 2 2, 4	1 1	(t)	100	6	2	141	4	2
2		1	(t)	98	5	1	135	2	1
3	2.0	2	(t)	147	8	3	125	3	1
4	2.8	2	(t)	119	4	1	117	2	1
5	4.8	2	(t)	110	3	1	113	4	1
_	5.6		(t)	400	_				
6	7.2	2		106	2	1	111	4	1
7		3	(t)	98	2	, 1	96	4	1
8	6.6	4	(t)	91	1	(t)	104	4	a1
9	6.0 6.6	2 2	(t)	86	3 2	1	125	4	1 2
10	0.0	4	(t)	84	2	(t)	141	4	
11	7.2	2	(t)	80	3		101	3	
12	7.2	1	(t) (t)	77	3 4	1	121 106		1
13	6.6	2	(t)	75	4	1		3	3
14	6.0	12	(t)	. 74	4	1 1	110 720	10 205	s735
15	682	621	s 4, 400	72	2	4 1			
10	002	021	54,400	1 12	Z	(t)	1,000	128	346
16	2,440	537	s 5, 960	70		_{/43}	500	0.4	90
17	355	42	85,960 40		1	(t)	562	24	36
18	195	18	40 9	72	2	(t)	412	14	16
19	135	10	3	82	3	1	412	10	11
20	105	9		224	43	26	426	14	16
20	100	6	2	680	141	259	365	14	14
21	85	4	1	l EAR	42		077	90	97
22	75	3		547 362		62	277	36	27
23	65	2	(t)		12 7	12	237	33	21
24	60	2		275 227	8	5	289	15	12
25	55	2	(t) (t)			5	234	3	2
20	- 55		(1)	198	3	2	198	3	2
26	55	3	41	1771			107		
27	60	3	(t) (t)	171 150	2 2	1	167	6	3
28	65	9	(1)			1	158	8	3
29	105		12	145	2	1	156	14	6
30	135	44 27	10	184	4	2	255	38	26
31	129	14	5	164	3	1	1,060	359	1,030 135
,							659	76	
Total.	4,875.2	<u></u> _	10,448	4,968		395	9,132		2,458
		January			February			March	
-	516	16	22	129	4	1	232	6	4
1	426	13	15	133	4	a1	224	5	3
2	365			110	4		198		
3	325								
5		11	11			a1		5	3
•	204	9	8	100	3	a 1	224	5	3
	294								
ا ۾		9 8	8 6	100 110	3 3	a 1 1	224 828	5 189	3 423
6	269	9 8 4	8 6 3	100 110 208	3 3 30	a 1 1 17	224 828 1,140	5 189 42 8	3 423 1,320
7	269 245	9 8 4 4	8 6 3 3	100 110 208 826	3 3 30 202	a 1 1 17 451	224 828 1,140 1,500	5 189 428 296	3 423 1,320 1,200
7 8	269 245 215	9 8 4 4 4	8 6 3 3	100 110 208 826 456	3 3 30 202 46	a 1 1 17 451 57	224 828 1,140 1,500 960	5 189 428 296 64	3 423 1,320 1,200 166
7 8 9	269 245 215 210	9 8 4 4	8 6 3 3 2 2	100 110 208 826 456 336	3 30 202 46 19	a1 1 17 451 57 17	224 828 1,140 1,500 960 750	5 189 428 296 64 33	3 423 1,320 1,200 166 67
7 8	269 245 215	9 8 4 4 4 4	8 6 3 3	100 110 208 826 456	3 3 30 202 46	a 1 1 17 451 57	224 828 1,140 1,500 960	5 189 428 296 64	3 423 1,320 1,200 166
7 8 9	269 245 215 210	9 8 4 4 4 4	8 6 3 3 2 2	100 110 208 826 456 336	3 30 202 46 19	a1 17 451 57 17 a11	224 828 1,140 1,500 960 750	5 189 428 296 64 33	3 423 1,320 1,200 166 67
7	269 245 215 210 203	9 8 4 4 4 4 4	8 6 3 2 2 2 2	100 110 208 826 456 336 269	3 30 202 46 19 15	a1 17 451 57 17 a11	224 828 1,140 1,500 960 750 568	5 189 428 296 64 33 20	3 423 1,320 1,200 166 67 31
7 8 9 10	269 245 215 210 203 194 184	9 8 4 4 4 4 4	8 6 3 3 2 2 2 2 2	100 110 208 826 456 336 269 305 339	3 30 202 46 19 15	a1 17 451 57 17 a11	224 828 1,140 1,500 960 750 568 499 466	5 189 428 296 64 33 20 23 33	3 423 1,320 1,200 166 67 31
7	269 245 215 210 203 194 184 180	9 8 4 4 4 4 4 4	8 3 3 2 2 2 2 2 2	100 110 208 826 456 336 269 305 339 245	3 30 202 46 19 15 19 22 14	a1 17 451 57 17 a11 a16 a20	224 828 1,140 1,500 960 750 568 499 466 383	5 189 428 296 64 33 20 23 33 12	3 423 1,320 1,200 166 67 31 31 42 12
7	269 245 215 210 203 194 184	9 8 4 4 4 4 4	8 6 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	100 110 208 826 456 336 269 305 339 245 272	3 30 202 46 19 15	a1 17 451 57 17 a11 a16 a20	224 828 1, 140 1, 500 960 750 568 499 466 383 337	5 189 428 296 64 33 20 23 33	3 423 1,320 1,200 166 67 31 31 42 12 6
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7	269 245 215 210 203 194 184 180 169 164 162 150 141	9 8 4 4 4 4 4 4 3 3 3 3	8 6 3 3 3 2 2 2 2 2 2 2 2 1 1 1 1 a 1 2 2	100 110 208 826 456 336 269 305 339 245 272 272 272 245 222 205 184	3 30 202 46 19 15 19 22 14 9 5	a1 17 451 57 17 a11 a16 a20 9 a7 4	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282	5 189 428 296 64 33 20 23 33 12 7 9	3 423 1,320 1,200 166 67 31 31 42 12 6 7
7	269 245 215 210 203 194 184 180 169 164 162 150 141	9 8 4 4 4 4 4 4 4 3 3 3 3 3	8 6 3 3 3 2 2 2 2 2 2 2 1 1 1 1 a 1 1	100 110 208 826 456 338 269 305 339 245 272 272 272 245 222 205	3 30 202 46 19 15 19 22 14 9 5	a1 17 451 57 17 a11 a16 a20 9 a7 4	224 828 1,140 1,500 960 750 568 499 466 383 337 307	5 189 428 296 64 33 20 23 33 12 7 7 9	3 423 1,320 1,200 1,66 67 31 31 42 12 6 7 7 . 5 5 16
7	269 245 215 210 203 194 184 180 169 164 162 150 141	9 8 4 4 4 4 4 4 4 3 3 3 3 3	8 6 3 3 3 2 2 2 2 2 2 2 2 1 1 1 1 a 1 2 2	100 110 208 826 456 336 269 305 339 245 272 272 272 245 222 205 184 175	3 30 202 46 19 15 19 22 14 9 5	a1 17 451 57 17 a11 a16 a20 9 a7 4	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282	5 189 428 296 64 33 20 23 33 12 7 7 9	3 423 1,320 1,200 1,66 67 31 31 42 12 6 7 7 . 5 5 16
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7	269 245 215 210 203 194 184 180 169 164 162 150 141 143 131	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 6 3 3 3 2 2 2 2 2 2 2 1 1 1 1 2 2 1 1 2 2 1 2 2 1 2 2 1 2 1 2 2 2 1 2 2 2 1 2 2 2 1 2 2 2 1 2	100 110 208 826 456 336 269 305 339 245 272 272 245 222 205 184 175	3 30 202 46 19 15 19 22 14 9 5 7 5 7	a 1 17 451 57 17 a 11 a 16 a 20 a 7 4 3 3 4 3 2 3	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282 255	5 189 4 28 296 64 33 20 23 33 12 7 9 8 7 7	3 423 1,320 1,200 1,200 166 67 31 31 42 12 6 7 7 7 . 5 16 4
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	269 245 215 210 203 194 180 169 164 182 150 141 143 131	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	866333222222222222222222222222222222222	100 110 208 826 456 336 269 305 339 245 272 272 272 245 222 205 184 175	3 30 202 46 19 15 19 22 14 9 5 7 5 7 5 7	a1 1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 4 3 3 2 3	224 828 1,140 1,500 960 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060	5 189 4 28 296 64 33 20 23 33 12 7 9 8 7 7 21 6	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 5 16 4 34 675 246
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24.	269 245 215 210 203 194 184 189 164 162 150 141 143 131 121 143 131	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 6 6 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 2 2 1 1 1 1	100 110 208 826 456 336 369 305 339 245 272 272 272 272 272 184 175 169 178 275 283	3 30 202 46 19 15 19 22 14 9 5 5 7 7 7 17	a1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 4 3 2 3 3	224 828 1,140 1,500 960 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 980 694	5 189 4 28 296 64 33 20 23 33 12 7 9 8 8 7 7 7 7 21 6	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 16 4 34 675 246 56
7	269 245 215 210 203 194 180 169 164 182 150 141 143 131	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	866333222222222222222222222222222222222	100 110 208 826 456 336 269 305 339 245 272 272 272 245 222 205 184 175	3 30 202 46 19 15 19 22 14 9 5 7 5 7 5 7	a1 1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 4 3 3 2 3	224 828 1,140 1,500 960 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060	5 189 4 28 296 64 33 20 23 33 12 7 9 8 7 7 21 6	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 5 16 4 34 675 246
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25	269 245 215 210 203 194 184 189 164 162 150 141 143 131 121 143 131	9844444433333334444433	8 6 6 3 3 3 2 2 2 2 2 2 2 1 1 1 1 1 2 2 1 1 1 1	100 110 208 826 456 336 339 245 272 272 272 245 222 205 184 175 169 178 275 283 250	3 30 202 46 19 15 19 22 14 9 5 5 7 7 7 17	a1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 4 3 2 3 3	224 828 1,140 1,500 960 750 568 499 466 383 337 307 326 289 284 282 2255 350 1,060 980 694 568	5 189 4 28 296 64 33 20 23 33 12 7 9 8 8 7 7 7 7 21 6	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 5 16 4 34 675 246 56 21
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 225. 26	269 245 215 210 203 194 184 180 169 164 162 150 141 143 131 143 131 17	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 6 6 3 3 3 2 2 2 2 2 2 2 2 2 1 1 1 1 2 2 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 272 275 245 222 205 184 175 169 178 275 283 250	3 30 202 46 19 15 19 22 14 9 5 5 7 17 13 8	a 1 17 451 57 17 a 11 a 16 a 20 9 a 7 4 3 3 4 3 3 2 3 3 13 10 5 3	224 828 1,140 1,500 750 750 568 499 466 383 337 307 307 289 284 282 255 350 1,060 980 694 568	5 189 4 28 296 64 33 320 23 33 12 7 9 8 7 7 21 6 236 93 30 14	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 7 5 5 16 4 34 675 246 56 21
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27.	269 245 215 210 203 194 184 180 169 164 162 150 141 143 131 123 117	9 8 4 4 4 4 4 4 4 4 4 4 4 4 3 3 3 3 3 3 3	8 6 3 3 2 2 2 2 2 2 2 1 1 1 a 1 2 1 1 1 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 272 275 184 175 169 178 275 283 250	3 30 202 46 19 15 19 22 14 9 5 7 5 7 7 17 13 8	a1 17 451 57 17 a11 a16 a20 9 a7 4 3 4 3 3 2 2 3 3 13 10 5	224 828 1,140 1,500 960 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 694 568 516 417	5 189 4 28 296 64 33 20 23 33 12 7 9 8 7 7 7 21 6 36 236 236 236 236 236	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 5 5 16 4 4 675 246 56 21 17 16
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28.	269 245 215 210 203 194 184 180 169 164 162 150 141 143 131 121 143 131 121 123 137	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 6 3 3 3 2 2 2 2 2 2 2 2 1 1 1 1 2 2 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 245 222 205 184 175 169 178 275 283 250	3 30 202 46 19 15 19 22 22 14 9 5 7 5 7 17 13 8 5 7	a 1 17 451 57 17 a 11 a 16 a 20 a 7 4 3 3 4 4 3 3 13 10 5	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 980 694 568	5 189 4 28 296 64 33 320 23 33 12 7 9 8 7 7 21 6 236 93 30 14 12 14	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 7 5 5 16 4 34 675 246 56 21
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29.	269 245 215 210 203 194 180 169 164 182 150 141 143 131 123 117 111 123 96 6 120	9 8 4 4 4 4 4 4 4 4 4 4 3 3 3 3 3 3 3 3 3	8 6 3 3 2 2 2 2 2 2 1 1 1 1 2 1 1 1 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 272 275 184 175 169 178 275 283 250	3 30 202 46 19 15 19 22 14 9 5 7 5 7 7 17 13 8	a1 17 451 57 17 a11 a16 a20 9 a7 4 3 4 3 3 2 2 3 3 13 10 5	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 694 568 516 417 362 331	5 189 4 28 296 64 33 20 23 33 12 7 9 8 7 7 7 21 6 36 236 236 236 236 236	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 5 16 4 34 675 246 56 21 17 16 17
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 30.	269 245 215 210 203 194 184 180 169 164 162 150 141 143 131 121 123 117 111 123 96 120	9 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 6 6 3 3 3 2 2 2 2 2 2 2 2 2 2 1 1 1 1 2 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 272 275 184 175 169 178 275 283 250 227 234	3 30 202 46 19 15 19 22 22 14 9 5 7 5 7 17 13 8 5 7	a1 1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 2 3 3 13 10 5	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 980 694 568 516 417 362 331 302	5 189 4 28 296 64 33 32 20 23 33 12 7 9 8 7 21 6 236 236 236 237 30 14 12 14	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 7 . 5 16 4 675 246 56 21
7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 29. 29. 20. 10. 10. 10. 10. 10. 10. 10. 10. 10. 1	269 245 215 210 203 194 180 169 164 182 150 141 143 131 123 117 111 123 96 6 120	9 8 4 4 4 4 4 4 4 4 4 4 3 3 3 3 3 3 3 3 3	8 6 6 3 3 3 2 2 2 2 2 2 2 2 2 2 1 1 1 1 2 1 1 1 1	100 110 208 826 456 336 269 305 339 245 272 272 272 275 184 175 169 178 275 283 250 227 234	3 30 202 46 19 15 19 22 22 14 9 5 7 5 7 17 13 8 5 7	a1 1 17 451 57 17 a11 a16 a20 9 a7 4 3 3 2 3 3 13 10 5	224 828 1,140 1,500 750 568 499 466 383 337 307 326 289 284 282 255 350 1,060 694 568 516 417 362 331	5 189 4 28 296 64 33 32 20 23 33 12 7 9 8 7 21 6 236 236 236 237 30 14 12 14	3 423 1,320 1,200 166 67 31 31 42 12 6 7 7 . 5 16 4 34 675 246 675 246 17 16 17 4 3

s Computed by subdividing day.
t Less than 0.5 ton.
a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

RAPPAHANNOCK RIVER BASIN -- Continued

HAZEL RIVER AT RIXEYVILLE, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continue1

		Suspended s							
Ĺ		April		ii .	May		1	June	
Γ		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean	Mean	_	Mean	Mean		Mean	Mean	
Day	dis- charge	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
J	(cfs)	tration	per	charge	tration	per	charge	tration	per
l	(CIS)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	259	5	3	222		3	110		2
2	246	5	3	232 212	4 5	3	112 103	8 7	2
3	237	5			9	5	96	7	
4	215	5	3 3	199	5		87	6	2
5	204	5		193		3		7	1
•	203	ا ا	3	182	4	2	82	'	2
6	204	4	2	164	5	2	74	5	1
7	206	4				2			1
8	184	4	2 2	146 142	4 7	3	72 350	5 94	89
9	172	4	2		7	2			
10	168	4	2	132 126	3	1	450 312	94 76	114 64
20	100	1 -		120	3		312	70	04
11,	166	11	5	126	3	1	392	195	206
12	340	18	17	130	5	2	657	160	284
13	289	12	9	136	8	3	401	30	32
14	350	19	9	417	38	43	302	15	12
15	482	17	22	328	6	5	248	22	
		[*'		320	"	"	470	-22	15
16	395	13	14	237	4	3	204	11	6
17	348	1 7	7	208	4	2	168	12	5
18	320	8	7	184	4	2	142	10	4
19	305	6	5	170	4	2	263	114	81
20	284	6	5	156	4	2	274	84	62
		1	ا ا	150	,	4	213	0*2	02
21	259	7	a 5	150	5	2	162	15	7
22	315	7	6	174	11	5	130	11	4
23	269	5	4	310	41	34	130	13	5
24	248	6	4	252	22	15	103	6	2
25	289	11	9	193	13	7	92	6	1
			• •	103	15	•	32		1
26	365	14	14	160	9	a4	101	6	2
27	326	7	6	136	8	3	94	6	2
28	302	6	5	125	6	2	82	8	2
29	274	6	4	128	9	3	74	8	2
30	248	4	3	180	23	11	68	8	1
31				136	21	8	""		
Total.	8, 269		185				5 000		
10	8, 203		103	5,764		185	5,827		1,013
1									
		July	1		August			September	
1	6	July		22	August	(4)	210	September	7
1	6 58	6	1	33	6	(t)	310 202	8	7
2	58	6	1	36	6 8	1	292	8 7	6
2 3	58 50	6 6 6	1 1	36 26	6 8 5	(t)	292 295	8 7 16	6 13
2	58 50 44	6 6 6	1 1 1	36 26 61	6 8 5 23	(t) 4	292 295 400	8 7 16 12	6 13 13
2	58 50	6 6 6	1 1	36 26	6 8 5	(t)	292 295	8 7 16	6 13
2	58 50 44 41	6 6 6 8	1 1 1 1	36 26 61 72	6 8 5 23 20	(t) 4 4	292 295 400 338	8 7 16 12 6	6 13 13 5
2	58 50 44 41 49	6 6 6 8 8	1 1 1 1	36 26 61 72 43	6 8 5 23 20	(t) 4 4	292 295 400 338	8 7 16 12 6	6 13 13 5
2	58 50 44 41	6 6 6 8	1 1 1 1 1	36 26 61 72 43 38	6 8 5 23 20 42 66	1 (t) 4 4 5 7	292 295 400 338 288 258	8 7 16 12 6	6 13 13 5 4 2
2	58 50 44 41 49 66	6 6 6 8 8	1 1 1 1 1	36 26 61 72 43 38 466	6 8 5 23 20	1 (t) 4 4 5 7 8891	292 295 400 338 288 258 230	8 7 16 12 6	6 13 13 5 4 2
2 3 4 5 6 8	58 50 44 41 49 66 58	6 6 6 8 8	1 1 1 1 1	36 26 61 72 43 38 466 140	6 8 5 23 20 42 66 609	1 (t) 4 4 5 7 8 891 27	292 295 400 338 288 258 230 210	8 7 16 12 6 5 3 3	6 13 13 5 4 2 2 2
2 3 5 6 8 9	58 50 44 41 49 66 58 110 79	6 6 6 8 8 8 8 8 60 82	1 1 1 1 1 1 1 18	36 26 61 72 43 38 466	6 8 5 23 20 42 66 609 71	1 (t) 4 4 5 7 8891	292 295 400 338 288 258 230	8 7 16 12 6 5 3	6 13 13 5 4 2
2 3 4 5 6 8 9 10	58 50 44 41 49 66 58 110 79	6 6 6 8 8 8 8 8 60 82	1 1 1 1 1 1 1 18	36 26 61 72 43 38 466 140	6 8 5 23 20 42 66 609 71 20	1 (t) 4 4 5 7 8 891 27	292 295 400 338 288 258 230 210 200	8 7 16 12 6 5 3 3	6 13 13 5 4 2 2 2 2
2 3 4 5 6 7 8 9 10	58 50 44 41 49 66 58 110 79	6 6 6 8 8 8 8 60 82	1 1 1 1 1 1 18 17 98 6	36 26 61 72 43 38 466 140	6 8 5 23 20 42 66 609 71 20	1 (t) 4 5 7 8 891 27 4	292 295 400 338 288 258 230 210	8 7 16 12 6 5 3 3 3	6 13 13 5 4 2 2 2
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2	58 50 44 41 49 66 58 110 79 244 112 82 71	6 6 6 8 8 8 8 60 82 143 19 18	1 1 1 1 1 1 18 17 98 6 4 4	36 26 61 72 43 38 466 140 74	6 8 5 23 20 42 66 609 71 20 20	(t) 4 4 5 7 8 891 27 4	292 295 400 338 288 258 230 210 200	8 7 16 12 6 5 3 3 3	6 13 13 5 4 2 2 2 2 2
2	58 50 44 41 49 66 58 110 79 244 112 82	6 6 6 8 8 8 8 8 60 82 148 19	1 1 1 1 1 1 1 18 17 98 6	36 26 61 72 43 38 466 140 74 68 338 3,970	6 8 5 23 20 42 66 609 71 20 20 306 639	(t) 4 4 5 7 8 8 9 1 27 4 8 7 3 1 6, 8 5 0	292 295 400 338 288 258 230 210 200 195 185 171 162	8 7 16 12 6 5 3 3 3	6 13 13 5 4 2 2 2 2 2 2 2
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63	6 6 6 8 8 8 8 60 82 148 19	1 1 1 1 1 1 18 17 98 6 4 3 3	36 26 61 72 43 38 466 140 74 68 338 3,970 1,120 676	6 8 5 23 20 42 66 609 71 20 20 306 639 71	(t) 4 4 5 7 8 891 27 4 8 731 6,850 215	292 295 400 338 288 258 230 210 200 195 185 171 162 153	8 7 16 12 6 5 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63	6 6 6 8 8 8 8 80 82 148 19 18 14 19	1 1 1 1 1 1 18 17 98 6 4 3 3	36 26 61 72 43 38 466 140 74 68 338 3,970 1,120	6 8 5 23 20 42 66 609 71 20 20 306 639 71 41	(t) 4 4 4 5 7 8 891 277 4 4 8 731 6,850 215 75	292 295 400 338 288 258 230 210 200 195 185 171 162 153	8 7 16 12 6 5 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63 54	6 6 6 8 8 8 8 60 82 148 19	1 1 1 1 1 1 18 17 98 6 4 3 3	36 26 61 72 43 38 466 140 74 68 338 3,970 1,120 676	6 8 8 5 23 20 20 42 66 609 71 20 20 306 639 71 41 26 266	(t) 4 4 4 5 7 8 891 277 4 4 8 731 6,850 215 75	292 295 400 338 288 258 230 210 200 195 185 171 162 153	87 16 12 6 5 3 3 3 3 3 3 3	6 13 13 5 4 2 2 2 2 2 2 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63 54 47 46	6 6 6 8 8 8 8 80 82 148 19 18 14 19	1 1 1 1 1 1 18 17 98 6 4 3 3	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676	6 8 5 23 20 42 66 609 71 20 20 306 639 71 41	(t) 4 4 5 7 8891 27 4 8731 6,850 215 75	292 295 400 338 288 258 230 210 200 195 185 171 162 153	87 76 12 6 5 3 3 3 3 3 3	6 13 13 5 4 2 2 2 2 2 2 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63 54	6 6 6 8 8 8 8 60 82 148 119 118 114 119 117	1 1 1 1 1 1 18 17 98 6 4 3 3 3	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 23,800 6,540	6 8 8 5 3 220 42 66 609 71 20 306 639 71 41 26 6 266 580	(t) 4 4 4 4 5 7 7 8 891 27 4 4 8 731 6,850 215 75 29 \$2,280 \$34,700	292 295 400 338 288 258 230 210 200 195 185 171 162 153	87 16 12 6 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63 54 47 46	6 6 6 8 8 8 8 6 00 82 148 19 18 14 19 11 11	1 1 1 1 1 1 18 17 98 6 4 3 3	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 23,800 6,540	6 8 8 5 23 20 20 42 66 609 71 20 20 306 639 71 41 26 266	(t) 4 4 4 4 5 5 7 7 8 891 27 4 4 8 731 6,850 215 75 29 \$2,280	292 295 400 338 288 258 230 210 200 195 185 171 162 153	87 166 122 6 5 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 82 71 63 54 47 46 47 50	6 6 6 8 8 8 8 8 8 8 90 82 148 19 14 19 17 11 10 17 11 10 12	1 1 1 1 1 1 1 18 8 6 4 3 3 3 3 1 2 1 1 2	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 6,540 1,740	6 8 8 5 23 20 42 66 609 71 20 20 306 639 71 41 26 266 580 143 84	1 (t) 4 4 4 5 7 8 891 27 4 4 8 731 6, 850 215 75 75 29 \$2, 280 \$34, 700 2, 530 , 395	292 295 400 338 288 258 230 210 200 195 185 171 162 153 146 140 142 140 160	87 16 12 6 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1
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2	58 50 44 41 49 66 58 110 79 244 112 71 63 54 47 47 46 64 77 50	6 6 6 8 8 8 8 8 8 60 82 148 19 19 18 14 19 17 117 117 110 12 10 8	1 1 1 1 1 1 1 18 8 6 4 3 3 3 3 1 2 1 1 2	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 6,540 1,740	6 8 8 5 23 20 42 66 609 71 20 20 306 639 71 41 26 266 580 143 84	1 (t) 4 4 4 5 7 8 891 27 4 4 8 731 6, 850 215 75 75 29 \$2, 280 \$34, 700 2, 530 , 395	292 295 400 338 288 258 230 210 200 195 185 171 162 153 146 140 142 140 160	87 16 12 6 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1
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2	58 50 44 41 49 66 58 110 79 244 112 71 63 54 47 46 47 50 39 34 31 30 30	6 6 6 8 8 8 8 8 8 8 90 82 148 19 18 14 19 11 10 17 11 10 12 10 8 7 8 10 9	1 1 1 1 1 18 18 6 4 4 3 3 3 3 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	36 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 23,800 6,540 1,740 1,060 810 1,250 894 545	6 8 8 5 3 23 20 42 66 609 71 20 20 306 639 71 41 26 266 580 143 84 61 41 214 39 32 17	(t) 4 4 4 5 7 8 891 27 4 4 8 731 6,850 215 75 29 \$2,280 \$34,700 2,530 395 175 900 722 73 47 222	292 295 400 338 288 258 230 210 200 195 185 171 162 153 146 142 140 160 135 122 125 175 185	87 16 12 6 5 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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2	58 50 44 41 49 66 58 110 244 112 82 71 63 54 47 46 47 50 39 34 30 30 30 27 25 22 21 21	6 6 6 8 8 8 8 8 8 8 9 9 18 14 19 10 10 12 10 8 8 7 7 8 10 11 13	1 1 1 1 1 1 18 98 6 4 4 3 3 3 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	36 26 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 23,800 6,540 1,740 1,060 810 1,250 694 545 475 415 362 338	6 8 8 23 20 42 66 609 71 20 306 639 71 41 266 266 266 266 214 3 8 4 21 4 21 4 3 3 2 3 2 17 10 10 10	1 (t) 4 4 4 5 7 7 8 8 9 1 27 7 4 8 7 3 1 1 6 , 8 5 0 2 1 5 7 5 9 0 7 2 2 2 1 1 1 0 9	292 295 400 338 288 258 230 210 200 195 185 171 162 153 146 140 140 140 150 122 125 175 185 122 125 175 185	87 1612 6 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2	58 50 44 41 49 66 58 110 79 244 112 71 63 54 47 46 47 46 50 39 34 31 30 30 30 22 22 21 18 22 21 21 21 21 21 21 21 21 21 21 21 21	6 6 6 8 8 8 8 8 8 6 0 8 2 14 8 14 19 10 12 10 12 10 8 7 7 8 8 10 9 8 8 11 13 13 13	1 1 1 1 1 18 18 17 98 6 4 3 3 3 3 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	36 26 61 72 43 38 466 140 74 68 338 3,970 1,120 676 417 1,480 23,800 6,540 1,740 1,060 810 1,250 694 545 475 415 362 338	6 8 8 5 3 220 42 66 609 71 20 20 20 639 71 41 26 266 540 143 84 61 41 214 39 32 17 100 10 10 10	1 (t) 4 4 4 5 7 8 891 277 8 891 277 4 4 8 731 6, 850 215 75 75 29 \$2, 280 \$34, 700 2, 530 722 73 47 22 11 10 9 9	292 295 400 338 288 258 230 210 200 195 185 171 162 153 140 140 140 140 140 140 140 140 140 140	87 16 12 6 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 6 3 2 2 2 2 2 2 3 3 3 3 3 3 4 6 3 3 3 3 3 3 3 3 3 3 3 3	6 13 13 5 5 4 2 2 2 2 1 1 1 1 1 1 1 1 1 2 2 3 1 1 1 1
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RAPPAHANNOCK RIVER BASIN -- Continued

HAZEL RIVER AT RIXEYVILLE, VA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. Duttom windrawat tuber, D. decantation; P. pippter; S. sere: N. in native water; W., in distilled water; C. chemically dispersed; M. mechanically dispersed)

:	Methods of analysis		BWMC	BN	BWMC	BN	BN	BWMC
		1.000	100	66	86	901	95	:
		0.500 1.000	66	86	96	66	85	100
		0.350						
	Percent finer than indicated size, in millimeters	0.250	97	92	88	96	84	66
	ize, in m	0.062 - 0.125	95	88	06	06	87	86
	ndicated s	0.062	92	88	87	84	8.7	97
ediment	ner than 11	0.031	84	82	82	99	82	96
Suspended sediment	Percent fü	0.008 0.016	70	67	72	42	65	85
S		0.008	54	4.7	22	22	43	25
		0.004 0	34	27	35	01	28	37
		0.002						
	Concentration of suspension	analyzed (ppm)	824	922	909	1,110	1, 290	577
	Concentration	ot sampre (ppm)	369	202	214	412	436	209
Water	tem- per-	ature (°F)					_	
	Discharge tem- (cfs) ature (°F)		1,990	1,324	761	5, 573	32, 995	25, 280
	Time		9:43 a. m.	10:28 a. m.	2:06 p.m.	12:00 m.	12:55 p. m.	6:33 p. m.
i	Date of collection		Oct. 16, 1954	Dec. 30	Feb. 7, 1955	Aug. 13	Aug. 18	Aug. 18

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA

LOCATION.--At gaging station at bridge on U. S. Highway 29 at Remington, Fauquier County, 0.3 mile upstream from Tinpot Run, 0.4 mile downstream from Fazel River, and at mile 35.2. BRIA.-Gel Sequare and stations and static brailes downstream from Fazel River, and at mile 35.2.

RECORDS AVAILABLE, --Chemical analyses: October 1951 to September 1955 Temperatures: May 1951 to September 1955. Sediment records: April 1951 to September 1955.

EXERGINGS. 1.364-55.—Introducts: Maximum, 27 ppm Oct. 1-10, July 21-31; minimum, 15 ppm Jan. 11-20, Feb. 11-20, Mar. 1-10.

Specific conductance: Maximum daily, 94.9 micromhos Oct. 1, minimum daily, 47.0 micromhos Dec. 26.

Water temperatures: Maximum daily, 28. Aug. 5; minimum daily, 1 ppm Feb. 2-4.

Sediment concentrations: Maximum daily, 1,090 ppm Oct. 16; minimum daily, 1 ppm Feb. 2-4.

Sediment concentrations: Maximum daily, 21,270 fords Aug. 18; minimum daily, 1 less than 0.50 for on many days.

EXTREMES. 1951-55.—Dissolved Golded (October 1951 to September 1952): Maximum, 51 ppm July 1-10, 1952; minimum, 39 ppm Feb. 21-29, 1952.

Specific conductance: Maximum daily, 96.0 micromhos Aug. 11, 1954; minimum daily, 18 micromhos Mar. 21, 1953.

Water temperatures: Maximum, 82 F July 30, 1953; minimum daily, 18 micromhos Mar. 21, 1953.

Sediment concentrations: Maximum daily, 1953, minimum freezing point on many days during each year.

Sediment concentrations: Maximum daily, 1953, minimum daily, less than 0.50 ton on many days during each year.

Sediment concentrations: Maximum daily 21-31, 1951; minimum daily, less than 0.50 ton on many days during each year.

Sediment concentrations: Maximum daily 23-3400 tons, Jule 10, 1951; minimum daily, 10-20, 000 ton on many days during each year.

Sediment concentrations: Maximum daily 23-3400 tons, Jule 10, 1951; minimum daily, 10-20, minimum

given in WSP 1382 to September 1955

	,																					
		Color			2	30	18	22	12	ī	6	20	20	9	4 5	~	10	2	12	23	20	52
		핊			7.1	7.	5.5	7.3	7.3	2.0	0.7	7.3	7.1	7.0	7.2	7.2	5	7	7.4	7.0	2.0	7.0
	Specific conduct-	ance	mhos at	25°C)	7.87	10.9	61.0	62.5	58.4	56.3	56.5	54.8	51.6	54.6	51.8	52.6	57 7	56.7	6.09	54.0	24.0	54.1
	iess CO,	Non-	carbon-	are	0	0	-	-	н	10	0	7	9	ຕ	0	0	c	-	0	0	4	m
	Hardness as CaCO,	Calcium	mag-	nesium	2.2	21	20	20	20	21	18	20	13	16	12	16	<u>~</u>	12.	16	12	18	18
	Dissolved solids	(residue	oration	at 180°C)	48	:	1	'	·	:	:	:	;	43	;	;	-	;	;	;	;	;
er 1955		Nitrate (NO)	, to 3		9.0	:	!	:	1	:	;	1	:	2.3	1	1	1	:	;	;	1	1
o Septemb	í	Fluoride (F)	ì		0.1	;	;	;	;	;	;	;	;	٦.	;	;	;	;	:	;	;	:
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride	į		3.2	;	;	;	;	:	1	;	;	8.8	;	;	;	;	;	:	:	;
er year Oc		Sultate	*		3.0	3.0	3.7	4.2	3.5	3.7	3.7	6,6	8.8	4.3	3.0	3.0	4	. 6	4	4.7	4.3	4.2
illion, wat	Bicar-	bonate	(HCO ₃)		37	25	23	24	24	18	22	19	: 5	16	19	20	2	12	21	19	17	18
arts per m	Potas-	sium	æ		2.7	1	:	1	ŀ	1	;	!	;	1.0	;	;	;	1	;	;	;	1
lyses, in p		mnibog (Na)			3.4	;	;	;	1	;	;	;	;	5.6	1	;	;		1	;	1	1
mical ana	Mag-	nesium	(Mg)		2.0	1.5	1.4	1.5	1.5	2.3	5		2.0	1.3	۲.	1.0	Ŀ	- 00	. «	9.	1.1	1.0
Che	Çaj	cium	(C3		7.7	5.8	5.8	5.7	2.4	4.6	8	4.7	4.2	4.3	4.8	4.8	5	4	2.5	5.0	5.2	5.4
		Fon (Fe)			0.00	.27	14	.15	.14	89.	12	8	91.	\$.07	.0	g	8	90.	8	8	90.
	i	(SiO)	(Control of the control	6.5	;	;	;	;	;	-1	:	;	12	:	;	;	;	1	:	;	1	
	Mean	discharge	(cfs)		6.5	632	127	182	202	421						208			517			1,231
		Date of collection			Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb 1-10	Feb. 11-20	Feb. 21-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

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Apr. 1-10, 1955 Apr. 11-20 Apr. 21-30 May 1-10 May 1-12 May 21-31	June 1-10 June 11-20 July 1-10 July 1-10 July 11-20	Aug. 1-10 Aug. 11-20 Aug. 21-31 Sept. 1-10 Sept. 11-20 Sept. 21-30	Average

RAPPAHANNOCK RIVER BASIN -- Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	40	40	40	32	49	44	61	63	73	77	72
2	73	45	40	40	32	47	48	57	62	74	79	70
3	72	39	39	40	32	43	52	60	61	76	78	70
4	72	40	35	43	32	47	49	59	62	77	78	69
5	74	43	32	42	38	49	48	64	66	77	80	69
6	73	40	32	42	33	49	52	65	70	77	79	70
7	53	39	32	38	33	42	51	61	69	75	78	72
8	48	37	32	41	33	40	47	65	67	78	75	68
8	54	39	34	36	32	44	48	60	60		71	65
10	61	38	34	35	36	48	53	60	58	78	70	65
11	63	36	32	35	41	51	54	62	62	76	74	69
12	66	38	32	32	32	50	57	62	63	72	75	68
13	66	39	33	33	32	52	57	62	63	73	70	70
14	68	40	36	32	32	49	55	59	64	70	70	61
15	69	39	39	34	32	50	56	59	63	75	71	63
16	55	41	40	33	34	54	57	58	65	80	74	72
17	54	45	37	34	37	48	58	61	68	79	74	71
18	50	47	39	32	37	47	56	58	70	77	73	74
19	50	52	38	33	36	45	55	58	69	78	73	70
20	48	54	35	32	37	44	58	63	66	76	71	73
											72	73
21 22	47 48	53	32	32	37	46	59	65 68	70	77 75	73	66
23	48 46	46	32	34	42	47	61 62	68	71 69	75	73	68
23 24	49	44	32	34	46	45	63	68	72	76	71	65
25	50	46 45	35 35	32	42	46	60	69	70	78	70	65
23	30	40	25	32	41	44	60	08	10	10	10	05
26	51	46		32	37	45	57	69	66	76	74	65
27	54	37	34	33	41	42	55	68	65	76	69	64
28	50	39	35	32	45	38	53	70	66	80	72	69
29	50	41	42			39	56	72	67	78	72	69 65
30 31	49	39	42	32		39	58	71	70	75	74	
31	45		40	32		50		68		75	75	
Aver- age	58	42	36	35	36	46	55	64	66	76	74	68

RAPPAHANNOCK RIVER BASIN

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955

		October			November			December	
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean concen-	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	6.2	5	(t)	193	11	6	260	5	4
2	6.2	3	(t)	162	9	4	241	4	3
3	6.2 5.6	5 4	(t)	260	15 10	11 6	228 214	4 3	2 2
4	5.0	6	(t) (t)	236 189	6	3	201	2	î
			("		,	_	}	_	
6	6.8	7	(t)	181	5	2	205	3	2
7 8	9.6 10	7	(t)	169	4	2 2	210	5 3	3 1
9	- 12	3	(t) (t)	154 140	3	1	158 250	5	3
10	12	3	(ť)	134	3	î	270	6	4
11		١.		40-		_		_	
11 12	14 15	4 3	(t) (t)	127 121	3 3	1 1	255 205	5 3	3 2
13	15) 6	(t)	121	2	i	214	10	6
14	15	4	(t)	115	2	1	1,110	222	665
15	191	308	s701	112	2	1	2,080	255	1,430
16	4,590	1,090	13,500	109	3	1 1	1,090	52	153
17	768	133	276	109	6	2	768	20	41
18	338	29	26	124	4	1	716	16	31
19 20	214 162	12 7	7 3	218 8 6 5	20 126	12 294	865 670	22 13	51 24
			[1		
21	134	5 5	2	995	62	167	527	10	14
22	115 103	4	2 1	638 475	18 7	31 9	439 501	14 6	17 8
24	92	4	î	355	4	4	463	7	9
25	88	5	1	338	4	4	391	5	5
26	85	7	2	290	3	2	328	6	5
27	85	l ;	2	260	4	3	316	8	7
28	85	6	1	241	5	3	322	5	4
29	115	37	11	300	6	5	527	50	71
30	236 260	47 26	30 18	316	6	5 	1,850 1,300	241 104	1, 200 365
Total.	7,799.6		14,586	8,047		586	17,174		4, 136
		January			February			March	
1	962	37	96	193	2	a i	488	12	16
2	794	34	73	228	1	1	457	15	19
3	670	14	25	201	1	1	403	9	10
4	592 534	10 9	16 13	173 165	1 35	(t) 16	427 1,370	39 226	45 836
		Ì	l I						
6	494	8	11	334	133	a 120	2,450	377	2, 490
7 8	451 403	5	6	1,740 1,030	434 134	2,040 373	3,670 1,890	638 158	6, 320 806
9	379	} 6	6	670	31	56	1,400	78	295
10	373	Ų	[]	566	31	47	1,090	55	162
11	355	h		624	36	61	962	38	99
12	344	5	5	794	92	197	930	38	95
13	328	ų į	•	534	29	42	780	28	59
14 15	350			560	11	17	670	20	36
	306	4	3	540	12	17	612	17	28
16	306	אַ		475	19	24	690	23	43
17	270	Π.		494	13	17	624	16	27
18 19	265 270	4	3	445 385	10 14	12 15	598 592	12 14	19 22
20	240	4	3	361	7	7	520	11	15
21	230	l .							65
21	300 300	II .	_	344 344	9 14	8 13	650 2,520	37 270	1,840
23	250	4	3	612	41	68	2.150	179	1,040
24	240	K		709	49	94	1,400	66	249
25	218			586	20	32	1,120	38	115
26	190	4	2	508	15	21	995	24	64
		II .	ı l	501	11	15	865	22	51
27	190	ll .							
27 28	169	,	,	534	13	19	742 876	14	28 22
27 28 29	169 170	3 6	1 3		13 	19 	676	12	28 22 20
27 28	169 170 170 165	3 6 3	1 3 a1	534 					22 20 12
27	169 170 170	6	3	534 			676 624	12 12	22 20

s Computed by subdividing day.
t Load less than 0.5 tons.
a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		April			May		l	June	
	Mean		d sediment	Mean	Suspende	ed sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	527	12	17	508	10	14	218	15	9
2	501	12	16	457	7	9	197	6	3
3 4	475 433	10 8	13 9	427 403	9 8	10 9	185 169		
5	403	8	9	379	8	(š	158	4	2
								ll l	
6, 7	403 421	11 11	12 13	338 300]]		148 144	20	8
8	373	7	7	290	6	5	334	110	99
9	344	9	8	275	Ų	[1,480	418	1,670-
10	328	5	4	255			780	71	150
11	322	13	11	250	4	3	791	85	182
12	657	41	73	265	1	j " j	1.510	306	1,250
13	702	26	49	260	Ų	ļ	1,030	158	439
14 15	618 995	19 35	32 94	742 748	31 28	62 57	657 520	58 26	103 37
20	990	1	34	140	40	31	520	20	31
16	832	23	52	457	10	12	409	20	22
17	690 631	13 12	24 20	361	9 6	9 5	333 285	12 10	11 8
18 19	592	14	20	311 280	5	4	275	24	18
20	579	10	16	255	5	3	539	92	134
21	527	11	16	250	5	3	311	24	20 53
22	683 664	16 27	30 48	270 525	11 51	8 72	255 306	77 214	53 177
24	572	13	20	1,100	852	2,530	210	28	16
25	650	17	30	560	112	169	185	10	5
26	865	20	75	905	95	20	101	(I	
26 27	800	32 23	50	385 290	35 22	36 a 17	181 189		
28	722	16	31	255	14	10	154	} 6	3
29	624	14	24	246	11	7	144		
30	560	9	14	300	30	24	134	ו יי	
31 Total	17 400		839	270	18	13	10 001		4, 437
Total.	17, 493		033	12, 012		3, 123	12, 231	1 1	7, 701
		July			August			September	
1	127	July		39	4	(t)	735	39	77
2	124		1	49	4 7	1	560	39 15	23
2 3		July	1		4	(t)	735 560 572 735	39	
2	124 112		1	49 41	4 7 3	1	560 572	39 15 10	23 15
2	124 112 103 95	} 4		49 41 38 86	4 7 3 2 16	(t) (t) 4	560 572 735 696	39 15 10 12 15	23 15 24 28
2 3 4 5	124 112 103 95	9	2	49 41 38 86	4 7 3 2 16	(t) (t) 4	560 572 735 696	39 15 10 12	23 15 24 28
2	124 112 103 95 90 137 177	9 34 86	2 13 41	49 41 38 86	4 7 3 2 16	(t) (t) 4 2 23	560 572 735 696	39 15 10 12 15 9 9	23 15 24 28 14 12 7
2 3 4 5 6 7 8	124 112 103 95 90 137 177 342	9 34 86 606	2 13 41 560	49 41 38 86 57 75 1,100 516	4 7 3 2 16 12 112 920 204	1 (t) (t) 4 2 23 2,730 284	560 572 735 696 560 475 415 373	39 15 10 12 15 9 9	23 15 24 28 14 12 7
2	124 112 103 95 90 137 177	9 34 86	2 13 41	49 41 38 86 57 75 1,100	4 7 3 2 16 12 112 920	1 (t) (t) 4 2 23 2,730	560 572 735 696 560 475 415	39 15 10 12 15 9 9	23 15 24 28 14 12 7
2	124 112 103 95 90 137 177 342 197	9 34 86 606 265	2 13 41 560 141	49 41 38 86 57 75 1,100 516 162	4 7 3 2 16 12 112 920 204 29	1 (t) (t) 4 2 23 2,730 284 13	560 572 735 696 560 475 415 373 373	39 15 10 12 15 9 9 6 7 6	23 15 24 28 14 12 7 7 6
2	124 112 103 95 90 137 177 342 197	9 34 86 606 265 255 82	2 13 41 560 141 203 35	49 41 38 86 57 75 1,100 516 162	4 7 3 2 16 12 112 920 204 29 26 138	1 (t) (t) 4 2 23 2,730 284 13 8 165	560 572 735 696 560 475 415 373 373 361 361	39 15 10 12 15 9 9 6 7 6	23 15 24 28 14 12 7 7 6
2	124 112 103 95 90 137 177 342 197 295 158	9 34 86 606 265 255 82 36	2 13 41 560 141 203 35	49 41 38 86 57 75 1,100 516 162 121 442 8,790	4 7 3 2 16 12 112 920 204 29 26 138 604	1 (t) (t) 4 2 23 2,730 284 13 8 165 s 12,800	560 572 735 696 560 475 415 373 373 361 367 328	39 15 10 12 15 9 9 6 7 6	23 15 24 28 14 12 7 7 6
2	124 112 103 95 90 137 177 342 197 295 158 118	9 34 86 606 265 255 82 36 17	2 13 41 560 141 203 35 11 5	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620	4 7 3 2 16 12 112 920 204 29 26 138 604 184	1 (t) (t) 4 2 23 2,730 2,730 284 13 8 165 s 12,800 2,300	560 572 735 696 560 475 415 373 373 361 367 328 300	39 15 10 12 15 9 6 7 6 4 5 7	23 15 24 28 14 12 7 7 6
2. 3. 4	124 112 103 95 90 137 177 342 197 295 158 118 100 92	9 34 86 606 265 255 82 36 17 15	2 13 41 560 141 203 35 11 5 4	49 41 38 86 57 75 1,100 516 162 121 442 442 4,620 2,080	4 7 3 2 16 12 112 920 204 29 26 138 604 184	1 (t) 4 2 23 23, 730 284 13 8 165 s 12, 800 2, 300 955	560 572 735 696 560 475 415 373 373 361 367 328 300 295	39 15 10 12 15 9 6 7 6 4 5 7 5	23 15 24 28 14 12 7 7 6 4 5 6 4 2
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92	9 34 86 606 265 255 82 36 17 15	2 13 41 560 141 203 35 11 5 4	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080	4 7 3 2 16 12 112 920 204 29 26 138 604 170	1 (t) 4 2 23 2,730 284 13 165 s 12,800 2,300 955	560 572 735 696 560 475 415 373 373 361 387 328 300 295	39 15 10 12 15 9 6 7 6 4 5 7 3	23 15 24 28 14 12 7 7 6 4 5 6 4 2
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75	9 34 86 608 265 255 82 36 17 15	2 13 41 560 141 203 35 11 5 4	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170	1 (t) 4 2 23 2,730 284 13 8 165 s 12,800 2,300 955 159 s 1,250	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 275	39 15 10 12 15 9 6 7 6 4 5 7 5 3	23 15 24 28 14 12 7 7 6 4 5 6 4 2
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92	9 34 86 606 285 255 82 36 17 15 12 13 13	2 13 41 560 141 203 35 11 5 4	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800	4 7 3 2 16 12 112 920 204 29 26 138 604 170	1 (t) 4 2 23 2,730 284 13 8 165 12,800 2,300 955 159 s 1,250 s 21,300	560 572 735 696 560 475 415 373 373 361 387 328 300 295	39 15 10 12 15 9 6 7 6 4 5 7 3	23 15 24 28 14 12 7 7 6 4 5 6 4 2
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82	9 34 86 608 265 255 82 36 17 15	2 13 41 560 141 203 35 11 5 4	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 135	1 (t) 4 2 23 2,730 284 13 8 165 s 12,800 2,300 955 159 s 1,250	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285	39 15 10 12 15 9 9 6 7 6 4 5 7 5 3	23 15 24 28 14 12 7 7 6 4 5 6 4 2
2	124 112 103 95 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71	9 34 86 606 265 255 82 36 17 15 12 13 13 13 8	2 13 41 500 141 203 35 11 5 4	49 41 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 28,800 23,800 4,290	4 7 3 2 16 12 112 920 204 29 26 138 604 170 53 135 63 97	1 (t) 4 2 2 3 2,730 284 13 8 165 s 12,800 2,300 955 159 s 1,250 s 21,300 4,050 1,120	560 572 735 696 580 475 415 373 373 361 367 328 300 295 285 285 285 300	39 15 10 12 15 9 6 7 6 4 5 7 5 3 4 2 5 3 5	23 15 24 28 14 12 7 6 4 5 6 4 2 3 1 1 4 2
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71	9 34 86 606 265 255 82 36 17 15 12 13 13 10 8	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 335 63 97	1 (t) 4 2 23 23, 730 284 13 8 165 s 12, 800 2, 300 955 s 1, 250 s 21, 300 4, 050 1, 120 334	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285 285 300	39 15 10 12 15 9 6 7 6 4 5 7 5 3 4 2 5 3	23 15 24 28 14 12 7 7 6 6 4 5 6 4 2 3 1 4 2
2	124 112 103 95 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71	9 34 86 606 265 255 82 36 17 15 12 13 10 8	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 135 63 97	1 (t) 4 2 2 3 2,730 284 13 8 165 s 12,800 2,300 955 159 s 1,250 s 21,300 4,050 1,120 334 269	560 572 735 696 580 475 415 373 373 373 381 387 328 300 295 285 275 285 285 200	39 15 10 12 15 9 6 7 6 4 5 7 5 3 4 2 5 3 5	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 2 4
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71 65 57	9 34 86 606 265 255 82 36 17 15 12 13 13 10 8	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 335 63 97	1 (t) 4 2 23 2, 730 284 113 8 165 \$12, 800 2, 300 955 \$1, 250 \$21, 300 4, 050 1, 120 334 269 3, 800 350	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285 285 285 285 285 285 28	39 15 12 15 9 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 7	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 2 4 3 4 4 6
2	124 112 103 95 90 137 177 342 197 295 158 100 92 80 75 82 80 71	9 34 86 606 265 255 82 255 17 15 12 13 10 8 5 11 11 11	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2	49 41 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,196 26,800 23,800 4,290 2,210 1,510 3,750	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 63 97	1 (t) 4 2 23 2, 730 284 13 8 165 s 12, 800 2, 300 955 5 1, 250 s 21, 300 4, 050 1, 120 334 269 3, 800	560 572 735 696 475 415 373 373 361 367 328 300 295 285 285 300	39 15 10 12 15 9 6 7 6 4 5 7 5 3 4 2 5 5 4 6 6 6	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 2 4
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25.	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71 65 57 57	9 34 86 606 285 82 36 17 15 12 13 10 8 8 5 11 1 1 5 2	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2 1 2 2 1 (t)	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 335 63 97 56 66 67 37 58 81 33	1 (t) 4 2 23 2, 730 284 13 8 165 12, 800 2, 300 955 1, 250 s 21, 300 4, 050 1, 120 334 269 3, 800 3, 350 100	560 572 735 696 5696 5696 475 415 373 373 361 367 328 300 295 285 285 285 285 285 285 285 28	39 15 12 15 9 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 7 14	23 15 24 28 14 12 7 7 6 6 4 5 6 4 2 2 3 1 4 2 4 3 4 4 6 6 18 18 18 18 18 18 18 18 18 18 18 18 18
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71 65 57 54	9 34 86 606 285 82 36 17 15 12 13 10 8 5 11 15 5	2 13 41 560 141 203 35 5 4 3 3 3 2 2 2 1 (t)	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,220 2,210 1,510 3,750 1,600	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 335 63 97 56 66 6375 81	1 (t) 4 2 23 2, 730 284 113 8 165 \$12, 800 2, 300 955 \$1, 250 \$21, 300 4, 050 1, 120 334 269 3, 800 350	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285 285 285 285 285 285 28	39 15 12 15 9 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 7	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 2 4 3 4 4 6
2	124 112 103 95 90 137 177 342 197 295 158 109 92 80 71 65 57 51 47 47 41 41 36	9 34 86 606 265 255 82 36 17 15 12 13 13 10 8 5 11 11 5 5 2 4 3 3 5	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2 1 2 2 1 (t)	49 41 41 41 41 41 48 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 135 63 97 56 66 375 81 133	1 (t) 4 2 2 3 2,730 284 13 8 165 s 12,800 2,300 s 21,300 s 21,300 4,050 1,120 334 269 3,800 350 100 70 a 78 75	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285 285 285 300 250 250 250 255 338 469	39 15 12 15 99 67 6 45 77 53 42 53 5 46 66 71 46 64 5	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 4 6 18 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2. 3. 4. 5	124 112 103 95 90 137 177 342 197 295 158 100 92 80 75 82 80 71 65 57 49 67	9 34 86 606 265 255 82 255 11 12 13 13 10 8 5 11 11 5 2 2 4 3 5 5 4	2 13 41 5600 141 203 35 11 5 4 3 3 3 2 2 2 1 (t) (t)	49 41 41 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120 957 822 716 624	4 7 3 2 16 12 112 920 204 29 26 138 604 187 135 335 63 97 56 66 375 81 33 33 33 41	1 (t) (t) 4 2 23 2,730 284 13 8 165 s 12,800 2,300 955 s 1,250 s 21,300 4,050 1,120 334 269 3,800 350 100 70 a 78 75 24	560 572 735 696 560 475 415 373 373 361 387 328 300 295 285 285 285 300 300 250 250 250 255 328 328 328 328 328 328 328 328	39 15 12 15 9 6 7 6 4 5 7 5 3 4 6 6 7 14 6 4 5 4 5 4 5 4 5 4 5 4 5 4 6 7 1 6 7 1 6 7 1 7 1 7 1 8 1 8	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 4 6 18 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2. 3. 4. 5. 5. 6	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71 65 57 49 47 41 36 33 32 28	9 34 86 606 285 255 82 36 17 15 12 13 10 8 5 11 15 5 2 4 3 5 5 4 7 7	2 13 41 560 141 203 35 11 5 4 4 3 3 3 2 2 2 1 (t) (t) (t) (t) (t) (t) 1	49 41 41 41 41 41 48 86 57 75 1,100 516 162 121 4,620 2,080 1,110 1,960 28,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120 957 822 716 624 572	4 7 3 2 16 12 112 920 204 29 26 138 604 170 53 135 63 97 56 66 375 81 33 27 33 33 41 41 21 21 21 21 21 21 21 21 21 21 21 21 21	1 (t) 4 2 2 3 2,730 284 13 8 165 s 12,800 2,300 955 1,250 s 21,300 4,050 1,120 334 269 3,800 350 100 70 a 78 75 24 19	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 285 285 285 300 250 250 250 255 338 469	39 15 12 15 99 67 6 45 77 53 42 53 5 46 66 71 46 64 5	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 4 6 18 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2	124 112 103 95 90 137 177 342 197 295 158 118 109 2 80 75 82 80 71 49 49 47 44 47 41 43 65 57 47 47 41 43 63 63 63 64 64 64 64 64 64 64 64 64 64 64 64 64	9 34 86 606 265 255 82 255 11 12 13 13 10 8 5 11 11 5 2 2 4 3 5 5 4	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2 2 1 (t) (t) (t)	49 41 41 41 42 42 442 442 442 442 442 4,620 2,080 1,110 1,960 26,800 2,080 4,290 2,100 1,510 3,750 1,600 1,120 957 822 716 624 572 655	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 135 63 97 56 63 75 81 33 27 35 81 31 31 31 31 31 31 31 31 31 31 31 31 31	1 (t) (t) 4 2 2 3 2, 730 284 13 8 165 s 12, 800 2, 300 955 1, 250 s 21, 300 4, 050 1, 120 334 269 3, 800 350 100 70 a 78 75 24 19 25	560 572 735 696 580 475 415 373 373 381 367 328 300 295 285 285 285 300 250 250 255 338 469 322 265 255 250 255 250 255 255 250 255 255	39 15 12 15 99 67 6 45 77 53 42 53 5 46 66 71 46 64 54 54 54	23 15 24 28 14 12 7 7 6 4 5 6 4 2 3 1 4 4 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
2	124 112 103 95 90 137 177 342 197 295 158 100 92 80 75 82 80 71 65 57 49 49 47 41 33 28 32 3,161	9 34 86 606 265 255 82 36 17 15 12 13 110 8 5 11 111 5 2 4 4 3 5 4 4 7 4 4	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2 2 1 (t) (t) (t) (t) (t) (t) 1,043	49 41 41 41 41 42 42 42 57 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120 957 822 716 624 572 650 90,707	4 7 3 2 16 12 112 920 204 29 26 138 604 170 53 135 63 97 56 66 375 81 33 27 35 35 44 14 12 14	1 (t) (t) 4 2 2 3 2, 730 284 13 8 165 s 12, 800 2, 300 955 1.59 s 1, 250 s 21, 300 4, 050 1, 120 334 269 3, 800 350 100 70 a 78 75 24 19 925 52, 309	560 572 735 696 580 475 415 373 373 361 387 387 389 285 295 285 285 300 250 255 255 255 255 255 255 2	39 15 10 12 15 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 6 7 14 6 4 5 14 6 6 7 7 7 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7	23 15 24 28 14 12 7 7 6 4 5 6 4 2 2 3 1 1 4 2 4 4 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
2	124 112 103 95 90 137 177 342 197 295 158 118 100 92 80 75 82 80 71 49 67 41 36 33 28 3,161 Ischarge foi	9 34 86 606 285 82 36 17 15 12 13 13 10 8 8 5 11 11 5 2 4 4 3 5 4 4 7 7 4 r year (cfs	2 13 41 560 141 203 35 11 5 4 3 3 3 2 2 2 1 (t) (t) (t) (t) (t) (t) 1,043 days)	49 41 38 86 57 75 1,100 516 162 121 442 8,790 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,755 1,600 1,120 957 822 716 624 572 650 90,707	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 335 63 97 56 66 637 81 33 33 27 35 81 33 41 41 41 41 41 41 41 41 41 41 41 41 41	1 (t) 4 2 23 2, 730 284 13 8 165 12, 800 2, 300 955 51, 250 821, 300 4, 050 1, 120 334 269 3, 800 350 100 70 a 78 75 24 19 25 52, 309	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 275 285 285 300 250 250 250 250 255 265 255 265 250 232 232 232 232 245 250 250 250 250 250 250 250 25	39 15 110 12 15 9 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 7 14 6 6 7 14 6 6 7 14 6 7 14 6 7 14 6 7 14 7 14	23 15 24 28 14 12 7 7 6 6 4 5 6 4 2 2 3 1 4 4 2 4 4 6 18 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2	124 112 103 95 90 137 177 342 197 295 158 100 92 80 71 65 57 51 49 67 47 41 36 33 28 32 3,161 scharge foi and for year	9 34 86 606 285 82 36 17 15 12 13 13 10 8 8 5 11 11 5 2 4 4 3 5 4 4 7 7 4 r year (cfs	2 13 41 560 141 203 35 5 4 4 3 3 3 2 2 2 1 (t) (t) (t) (t) (t) (t) (t) 1,043 days)	49 41 41 41 41 42 42 42 57 4,620 2,080 1,110 1,960 26,800 23,800 4,290 2,210 1,510 3,750 1,600 1,120 957 822 716 624 572 650 90,707	4 7 3 2 16 12 112 920 204 29 26 138 604 184 170 53 135 63 97 56 66 375 81 33 27 33 41 21 24 24 29 29 20 41 29 20 41 29 20 41 20 41 41 41 41 41 41 41 41 41 41 41 41 41	1 (t) (t) 4 2 2 3 2,730 284 13 8 165 s 12,800 2,300 9 55 1,250 s 21,300 4,050 1,120 334 4,050 1,120 70 a 78 75 24 19 25 52,309	560 572 735 696 560 475 415 373 373 361 367 328 300 295 285 275 285 285 300 250 250 250 250 255 265 255 265 250 232 232 232 232 245 250 250 250 250 250 250 250 25	39 15 10 12 15 9 9 6 7 6 4 5 7 5 3 4 2 5 3 5 4 6 6 7 14 6 6 7 14 6 6 7 14 6 7 14 6 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	23 15 24 28 14 12 7 7 6 4 5 6 4 2 2 3 1 1 4 2 4 4 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1

s Computed by subdividing day. t Load less than 0.5 tons.

a Computed from estimated concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysiss: B, boftom withdrawal thee; D, decanation; P, pipette; S, sieve; N, in native water; C, chemically dispersed)

		Methods of analysis		BWMC	BN	BW MC	BW MC	BN	BN	BWMC	BW MC	BN	BW MC
			1.000	;	66	;	:	66	96	66	100	100	:
			0.500	100	97	100	1	96	57	86	66	26	100
			0.350										
		llimeters	0, 250	86	93	66	100	91	51	93	26	73	66
		ize, in mi	0.125	92	98	86	66	91	20	98	93	12	86
rsed)		Percent finer than andicated size, in millimeters	0.062	93	80	97	97	91	49	82	06	72	96
ally dispe	ediment	ner than 11	0.031	98	89	93	85	88	48	72	82	02	88
mechanic	Suspended sediment	Percent fü	0.016 0.031	11	48	22	81	65	36	55	92	52	69
rsed; M,	Sı		0.008	25	29	22	22	46	23	36	54	34	46
ally dispe			0.004	35	14	32	34	22	-11	19	34	12	26
C, chemic			0.002										
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	1,990	628	2,690	874	2,010	1.010	1, 190	726	1,300	1, 300
W, in d		Concentration	or sample (ppm)	910	243	917	334	736	453	460	328	495	484
	Water	tem-	ature (°F)										
		Discharge (cfs)			2,130							4,460	
		Time		11:18 а. ш.	12:49 p.m.	10:32 a.m.	1:10 p.m.	12:26 p.m.	2:51 p.m.	2:51 p.m.	9:50 a.m.	1:18 p.m.	1:18 p.m.
		Date of collection		Oct. 16, 1954	Dec. 30	May 24, 1955	June 9	Aug. 8 12:26 p.m.	Aug. 13.	Aug. 13	Aug. 18	Aug. 23.	Aug. 23

RAPPAHANNOCK RIVER BASIN -- Continued

RAPIDAN RIVER NEAR CULPEPER, VA.

LOCATION.--At bridge on U. S. Highway 522, 0.7 mile downstream from gaging station, and 8 miles south of Culpeper, Culpeper County.

DRAINAGE AREA.--465 square miles.

RECORDS AVAILABLE .-- Chemical analyses: October 1945 to September 1946, October 1951 to September 1952.

Water temperatures: October 1945 to September 1946, May 1951 to September 1955. Sediment records: April 1951 to September 1955. Sediment records: April 1951 to September 1955. Sediment records: April 1954-55.-Specific conductance: Maximum daily, 76.9 micromhos Oct. 15; minimum daily, 39.2 micromhos May 25.

Water temperatures: Maximum, 90°F Aug. 6; minimum, freezing point Dec. 21, Jan. 28, 30, Feb. 5.

Sediment concentrations: Maximum daily, 1,510 ppm Mar. 6; minimum daily, 2 ppm on several days.

Sediment loads: Maximum daily, 22,640 tons Aug. 18; minimum daily, less than 0.50 ton

on several days.

EXTREMES, 1945-46, 1951-55.-Dissolved solids (1945-46): Maximum, 47 ppm Sept. 21-30, 1946; minimum, 34 ppm Mar. 1-10, 1946.

Hardness (1945-46): Maximum, 19 ppm July 21-31, Sept. 11-20, 1946; minimum, 13 ppm

Hardness (1945-46): Maximum, 19 ppm July 21-31, Sept. 11-20, 1946; minimum, 13 ppm Jan. 11-20, 1946.

Water temperatures (1945-46, May 1951 to September 1955): Maximum, 91°F Aug. 9, 1951; minimum, freezing point on several days during winter months.

Sediment concentrations (April 1951 to September 1955): Maximum daily, 1,510 ppm Mar. 6, 1955; minimum daily, 1 ppm Oct. 2, 1952.

Sediment loads (April 1951 to September 1955): Maximum daily, 22,640 tcns Aug. 18, 1955; minimum daily, less than 0.50 ton on several to many days during each year.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79		42		35	55	56	64	70		88	74
2	77	44	42	46		55	58	66	71	85	l	
3	80	45	40	41	33	50	55	67	70	87	80	69
4	81	44	39	47	34	52	58		74		80	
5	83	46	39	43	32	51	58	73	77	80	80	75
6	73	46	36	46	33	50	58	72	80	80	90	76
7 .	72		35	44	38	45	54	71	71	78		
8	62		35	42	40	45	56		67	80	74	76
9	69	47	36	39	41	50	62	70	61	79	72	70
10	59	45	36	39	45	55	64	69	67	81	70	72
11	75	46	37	38		53	60	69	65	76	79	74
12	77	47		35	36	56	62	71	68	75	73	74
13	77	46	34	36		57	57	63	70	75	69	70
14	71	42	36	38	34	55	60	62	68	72	68	78
15	72	48	40	39	39	51	62	62	72	71	74	72
16	59	46	41	35	41	56	63	68	72	80	73	75
17	59	49	41	38	43	53	58	68	70		73	73
18	55		40	36	44	51	59	69		82	72	74
19	55	52	41	36	45	48	60	70	70	81	70	71
20	54	55	37	37	39	46	65	71	69	80	72	71
21	56	50	32	34	44	49	67	75	70	79	75	
22	57	50	34	34	45	53	64	70	70	80	75	67
23	57	46	33	36	49	51	69	76	74	82	74	65
24		47	34	37	44	53		79	1	79	73	66
25	58	45	36	37	::	48	60	79		79	71	
26	56	43	34	39	40	47	59	79	70	70	74	67
27	59		41	34	49	46	56	79	69	80	74	67
28	56	42	40	32	50	46	62	80	68	88	76	63
29	57	44	45	33		44	61	80	69	80	80	70
30	52	43	46	32		48	65	75	73	76	78	62
31	42		43	33		54		73		89	78	
Aver- age	65	46	38	38	41	51	60	71	70	79	75	71

RAPPAHANNOCK RIVER BASIN--Continued

RAPIDAN RIVER NEAR CULPEPER, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955

			ended sedir	ment, water		1304 to Sep	tember 1000		
		October			November			December	
	Mean		d sediment	Mean	Suspende	d sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tration	day
-		(ppm)	<u> </u>		(ppm)			(ppm)	
1 2	8, 8 2, 9	7	(t)	165 159	45 21	a 20 9	260 231	15 6	11 4
3	3.7	2	(t) (t)	290	18	14	223	3	2
4	2. 2	4	(t)	198	14	7	194	3	2
5	5.4	4	(t)	174	11	5	194	3	2
.		_		11		_		_	
7	6.6	2 2	(t)	162	7	3	198	3 2	2 1
	7.2 3.7	2	(t) (t)	147 142	5 4	a 2 2	168 142	3	1
8 , . 9	4.1	2	(t) (t)	128	4	1	204	3	2
10	4.8	6	(t)	120	4	î	320	7	6
l		}						ļ	
11	2.7	5	(t)	120	2	1	223	7	4
12	6.6 7.2	3 3	(t)	117	3 6	a 1 2	212 208	6 20	a3
13 14	6.6	2	(t) (t)	117 110	5	1	2,220	448	a 11 s 4, 100
15	199	85	46	112	3	i	2,760	363	2,710
1				Î l		ſ			[
16	3,130	890	7,520	108	3	1	1,110	70	210
17	537 290	161 30	233 23	112	3	1 a 2	778 745	30 20	63 40
18	198	19	23 10	115 187	5 17	a2	745 764	20 21	43
20	144	11	4	843	139	316	614	12	20
į.			_			1			
21	130	6	2	838	83	188	520	8	11
22	115 100	5 5	2 1	586 449	32 13	51 16	400 476	6 4	6 5
23 24	84	4	a l	375	8	8	427	5	6
25	90	4	1	340	19	17	375	6	Ğ
26	86	5	1	290	8	6	335	7	6
27	81 67	6 5	1	243	6	a4	305	4	3
28 29	119	13	1 4	235 365	4 14	3 14	305 990	5 146	4 390
20	305								
	300	54	44	325	14	12 1	1 2.310	300	1.870
30	255	54 82	44 56	325	14	12	2,310 1,230	300 100	1,870 332
31 Total.				7,672	14 	12 718			
31	255	82	56				1,230	100	332
Total.	255 6,002.5	82 January	56 7,951	7,672	 February	718	1,230 19,441	100 M arch	332 9,876
70tal.	255	82	56				1,230	100	332
1 2	255 6,002.5 901 745 631	82 January 40 22 16	56 7,951 a 97 44 27	7,672 208 227 220	February	718 3 a 4 7	1,230 19,441 466 449 390	100 March 13 13 10	332 9,876 16 16 11
1	255 6,002.5 901 745 631 570	82 January 40 22 16 14	56 7,951 a 97 44 27 22	7,672 208 227 220 200	 February 6 7 11 8	718 3 a 4 7 4	1,230 19,441 466 449 390 498	100 March 13 13 10 42	332 9,876 16 16 11 56
1 2	255 6,002.5 901 745 631	82 January 40 22 16	56 7,951 a 97 44 27	7,672 208 227 220	 February 6 7 11	718 3 a 4 7	1,230 19,441 466 449 390	100 March 13 13 10	332 9,876 16 16 11
1	255 6,002.5 901 745 631 570	82 January 40 22 16 14	56 7,951 a 97 44 27 22	7,672 208 227 220 200	 February 6 7 11 8	718 3 a 4 7 4 3	1,230 19,441 466 449 390 498	100 March 13 13 10 42	332 9,876 16 16 11 56
1 2 3 4 5	901 745 631 570 515 476 432	82 January 40 22 16 14 10	a 97 44 27 22 14	7,672 208 227 220 200 180 380 1,860	February 6 7 11 8 7 80 586	718 3 a 4 7 4 3 82 2,940	1,230 19,441 466 449 390 498 2,680 4,350 3,460	100 March 13 13 10 42 1,350 1,510 572	332 9,876 16 16 11 56 a 10,800 17,700 5,340
1 2 3 4 5 8	901 745 631 570 515 476 432 390	82 January 40 22 16 14 10 7 6 5	56 7,951 297 44 27 22 14 9 7	208 227 220 200 180 380 1,860 790	February 6 7 11 8 7 80 586 99	718 3 a 4 7 4 3 3 82 2,940 211	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510	100 March 13 13 10 42 1,350 1,510 572 170	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693
1	901 745 631 570 515 476 432 390 375	32 January 40 22 16 14 10 7 6 5 4	56 7,951 a 97 44 27 22 14 9 7 5	208 227 220 200 180 380 1,860 790 598	February 6 7 11 8 7 80 586 99 20	718 3 a 4 7 4 3 82 2,940 211	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230	100 March 13 13 10 42 1,350 1,510 572 170 90	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299
1 2 3 4 5 8	901 745 631 570 515 476 432 390	82 January 40 22 16 14 10 7 6 5	56 7,951 297 44 27 22 14 9 7	208 227 220 200 180 380 1,860 790	February 6 7 11 8 7 80 586 99	718 3 a 4 7 4 3 3 82 2,940 211	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510	100 March 13 13 10 42 1,350 1,510 572 170	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693
11	255 6,002.5 901 745 631 570 515 476 432 390 375 365	82 January 40 22 16 14 10 7 6 5 4 6	56 7,951 a 97 44 27 22 14 9 7 5 4 a 6	7,672 208 227 220 200 180 380 1,860 790 598 515	February 6 7 11 8 7 80 586 99 20 17	718 3 a 4 7 4 3 3 82 2,940 211 32 24	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845	100 March 13 13 10 42 1,350 1,510 572 170 90 59	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158
1	255 6,002.5 901 745 631 570 515 476 432 390 375 365 345	82 January 40 22 16 14 10 7 6 5 4 6	56 7,951 a 97 44 27 22 14 9 7 5 4 a 6	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901	February 6 7 11 8 7 80 586 99 20 17 17 27	718 3 a 4 7 4 3 3 82 2,940 211 32 24 a 23 66	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33	332 9,876 16 16 16 17,700 17,700 5,340 693 299 158 123 69
31. Total. 1	901 745 631 570 515 476 432 390 375 365 345 340 320	82 January 40 22 16 14 10 7 6 5 4 6 11 6 5	56 7,951 a97 44 27 22 14 9 7 5 4 a6	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901	February 6 7 11 8 7 80 586 99 20 17 17 27 18	718 3 4 4 3 82 2,940 211 32 24 23 66 218	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39
31	901 745 631 570 515 476 432 390 375 365 345 340 320 300	82 January 40 22 16 14 10 7 6 5 4 6 6 11 8 5 4	56 7,951 a 97 44 27 22 14 9 7 5 4 a 6	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12	718 3 a4 7 4 3 8 8 8 2 2,940 211 32 24 a 23 86 a 18 12	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603	100 March 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18	332 9,876 16 16 16 17,700 17,700 5,340 693 299 158 123 69 39 39 29
31. Total. 1	901 745 631 570 515 476 432 390 375 365 345 340 320	82 January 40 22 16 14 10 7 6 5 4 6 11 6 5	56 7,951 a97 44 27 22 14 9 7 5 4 a6	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901	February 6 7 11 8 7 80 586 99 20 17 17 27 18	718 3 4 4 3 82 2,940 211 32 24 23 66 218	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39
31 Total. 1	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 300 280 290	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4	56 7,951 a97 44 27 22 14 9 7 5 4 a6 10 6 4 3 3 3	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901 375 380 449	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20	332 9,876 16 16 16 17,700 5,340 693 299 158 123 69 39 29 30 33
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 346 340 300 280 290 275	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4	56 7,951 a 97 44 27 22 14 9 7 7 5 4 4 a 6	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 280 290 275 247	82 January 40 22 16 14 10 7 6 5 4 6 6 11 8 5 4 4 8 3 3	56 7,951 a97 44 27 22 14 9 7 5 4 a6 10 6 4 3 3 3	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 385	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504	100 March 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15	332 9,876 16 16 16 17,700 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 345 340 320 300 280 290 275 243	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4 4 4 4 3 3 4	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7 9	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 665 603 559 581 532 504 520	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 30 31 24 20 21
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 280 290 275 247	82 January 40 22 16 14 10 7 6 5 4 6 6 11 8 5 4 4 8 3 3	56 7,951 a97 44 27 22 14 9 7 5 4 a6 10 6 4 3 3 3	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 385	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8	718 3 a4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504	100 March 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15	332 9,876 16 16 16 17,700 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21.	255 6, 002. 5 901 745 631 570 515 476 432 390 375 365 340 320 300 280 290 275 247 243 227	82 January 40 22 16 14 10 7 6 5 4 6 6 11 8 5 4 4 4 5 5 4 4 3 3 4 4 4 3 3	56 7,951 a 97 44 27 22 21 14 9 7 5 4 4 a 6 10 6 4 4 3 3 3 3	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7	718 3 24 7 4 3 82 2,940 211 32 24 23 66 218 12 13 9 8 7 9 6 6 6	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504 476	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 31 32 24 20 21 19
11	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 280 290 275 247 243 227 208 215	82 January 40 22 16 14 10 7 6 5 4 4 6 5 4 4 3 3 4 4 4 3 3 3 3	56 7,951 a97 44 27 22 14 9 7 5 4 a6 6 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305	February 6 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7 9 6 6 6	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 520 476 1,680	100 March 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 15	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20 21 19
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 346 340 300 280 290 275 247 243 227	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4 4 5 3 3 3 3 3 3 3	56 7,951 a 97 44 27 22 14 9 7 5 4 4 a 6 10 6 4 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7 9 6 6 6 6 82	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504 520 476 554 1, 680 1, 430	100 March 13 13 10 42 1, 350 1, 510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 23 437 214	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20 21 19 34 19 34 19 34 19 34 25 36 37 38 38 39 39 30 31 31 31 31 31 31 31 31 31 31
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 280 290 275 247 243 227 208 215 215	82 January 40 22 16 14 10 7 6 5 4 6 6 5 5 4 4 4 3 3 3 3 3 3 4 4	56 7,951 a97 44 27 22 14 9 7 5 4 a6 10 6 4 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 8 10 7 7 8 552	718 3 4 7 4 3 8 8 2 2,940 211 32 24 4 23 66 a18 12 13 9 8 7 9 6 6 6 6 6 6 82 84	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 520 476 554 1,680 1,430 990	100 March 13 13 10 42 1, 350 1, 510 572 170 90 59 54 33 211 18 20 21 17 15 15 15 23 437 214 555	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 21 19 34 1,980 826 147
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25.	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 280 290 275 247 247 247 247 247 247 247 247 247 247	82 January 40 22 16 14 10 7 6 5 4 6 6 11 6 5 4 4 4 3 3 3 3 4 4 4 4	56 7,951 a 97 44 27 22 14 9 7 5 4 4 a 6 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581 598 532	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 8 10 7 7 8 52 52 28	718 3 4 7 4 3 8 2 2,940 211 32 24 4 23 66 a18 12 13 9 8 7 9 6 6 6 6 6 6 82 84 a40	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504 520 476 554 1, 680 1, 430	100 March 13 13 10 42 1, 350 1, 510 572 170 90 59 54 33 211 18 20 21 17 15 15 15 23 437 214 555 33	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 21 19 34 1,980 826 147 73
31	255 6,002.5 901 745 631 570 515 476 432 390 375 365 345 340 320 320 275 247 243 227 208 215 215 215 215 216	82 January 40 22 16 14 10 7 6 5 4 6 11 6 5 4 4 4 3 3 3 4 4 4 3 3 3 4 4 4 3 3	56 7,951 a 97 44 27 22 14 9 7 5 4 4 a 6 10 6 4 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581 598 532	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7 7 8 52 52 28	718 3 44 7 4 3 82 2,940 211 32 24 4 23 66 61 81 12 13 9 6 6 62 84 440 18	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 665 603 559 581 532 504 476 554 1,680 1,430 990 824 771	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 23 437 214 55 33 23	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 31 21 19 34 41,980 826 147 73 48
31. Total. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 22. 20. 22. 23. 24. 25. 26. 27.	255 6,002.5 901 745 631 570 515 476 432 390 375 365 340 320 3300 280 290 275 247 243 227 208 215 215 204 190	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4 3 3 4 4 3 3 4 4	56 7,951 a 97 44 27 22 21 4 a 6 10 6 4 4 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 296 290 581 598 532 454 471	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7 7 8 8 52 28 15	718 3 24 7 4 3 82 2,940 211 32 24 23 66 218 12 13 9 8 7 9 6 6 6 6 6 82 84 40 18 17	1, 230 19, 441 466 449 390 498 2, 680 4, 350 3, 460 1, 510 1, 230 990 845 778 685 603 559 581 532 504 520 476 554 1, 680 1, 430 990 824 771 667	100 March 13 13 10 42 1, 350 1, 510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 15 23 437 214 55 33 214	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20 21 19 34 1,980 826 147 73 48 32
31. Total. 1	255 6, 002. 5 901 745 631 570 515 476 432 390 375 365 345 340 280 275 247 208 215 215 215 204 190 187 162	82 January 40 22 16 14 10 7 6 5 4 4 6 11 8 5 4 4 4 3 3 3 4 4 4 3 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 4 3 3 4 4 4 4 3 3 4	56 7,951 a97 44 27 22 14 9 7 5 4 4 6 10 6 6 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 200 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581 598 532 454 471 504	February 6 7 11 8 7 80 586 99 20 17 17 17 27 18 12 11 8 8 8 10 7 7 8 52 52 28 15 13	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7 9 6 6 62 82 84 a 40 18 17 19	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 476 554 1,680 1,430 990 824 771 667 603	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 23 437 214 55 33 23 18 15	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20 21 19 34 1,980 826 147 73 48 32 24
31. Total. 1. 2. 3. 4. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 27. 28. 29. 29.	255 6,002.5 901 745 631 570 515 476 432 390 375 365 346 340 320 280 290 275 247 243 227 208 215 215 201 190 187 162 133	82 January 40 22 16 14 10 7 6 5 4 6 11 8 5 4 4 4 5 5 4 4 4 4 5 5 4 4 4 4 4 5 5 4 4 4 4 5 5 6 6 11 6 6 6 6 6 6 6 6 6 6 6 6 6 6	56 7,951 a 97 44 27 22 14 9 7 5 4 4 a 6 10 6 4 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 296 290 581 598 532 454 471	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7 7 8 8 52 28 15	718 3 24 7 4 3 82 2,940 211 32 24 23 66 218 12 13 9 8 7 9 6 6 6 6 6 82 84 40 18 17	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 476 554 1,680 1,430 990 824 771 667 603 559	100 March 13 13 10 42 1, 350 1, 510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 23 437 214 55 33 23 18 15 11	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 21 19 34 1,980 147,73 41,980 147,73 48 32 48 32 48 48 48 48 48 48 48 48 48 48
31	255 6, 002. 5 901 745 631 570 515 476 432 390 375 365 345 340 280 275 247 208 215 215 215 204 190 187 162	82 January 40 22 16 14 10 7 6 5 4 4 6 11 8 5 4 4 4 3 3 3 4 4 4 3 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 3 4 4 4 3 4 4 4 3 4	56 7,951 a97 44 27 22 14 9 7 5 4 4 6 10 6 6 4 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 3,860 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581 598 532 454 471 504	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7 7 8 52 52 28 15 13 14	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 6 6 6 6 6 82 84 a 40 18 17 19	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 476 554 1,680 1,430 990 824 771 667 603	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 23 437 214 55 33 23 18 15	332 9,876 16 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 21 19 34 20 21 19 34 20 21 19 41 48 32 24 41 48 48 48 48 48 48 48 48 48 48
31. Total. 1. 2. 3. 4. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 27. 28. 29. 29.	255 6,002.5 901 745 631 570 515 476 432 390 375 365 345 340 3200 280 290 275 247 243 227 208 215 215 204 190 187 162 133 220	82 January 40 22 16 14 10 7 6 5 4 6 6 5 5 4 4 4 3 3 4 4 4 3 3 4 4 5 5	56 7,951 a 97 44 27 22 14 9 7 5 4 4 a 6 4 4 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7,672 208 227 220 180 380 3,860 1,860 790 598 515 510 901 375 380 449 395 385 345 320 305 295 290 581 598 532 454 471 504	February 6 7 11 8 7 80 586 99 20 17 17 27 18 12 11 8 8 8 10 7 7 8 52 52 28 15 13 14	718 3 a 4 7 4 3 82 2,940 211 32 24 a 23 66 a 18 12 13 9 8 7 9 6 6 6 82 84 a 40 18 17 19	1,230 19,441 466 449 390 498 2,680 4,350 3,460 1,510 1,230 990 845 778 685 603 559 581 532 504 476 554 1,680 1,430 990 824 771 667 603 559	100 March 13 13 10 42 1,350 1,510 572 170 90 59 54 33 21 18 20 21 17 15 15 15 15 23 437 214 555 33 23 18 15 11 10	332 9,876 16 16 11 56 a 10,800 17,700 5,340 693 299 158 123 69 39 29 30 33 24 20 21 19 34 1,980 147 73 38 48 147 73 48 32 48 48 48 48 48 48 48 48 48 48

s Computed by subdividing day, t Less than 0, 50 ton, a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

RAPPAHANNOCK RIVER BASIN -- Continued

RAPIDAN RIVER NEAR CULPEPER, VA . -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

- 1		April			Мау		1	June	
	Mean	Suspende	d sediment	36	Suspende	d sediment	35	Suspende	d sediment
Day	dis-	Mean	Tons	Mean dis∽	Mean	Tons	Mean dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
1	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	454	<u> </u>		380	6	6	194	17	9
2	427	11 _ 1		365	8	8	174	14	7
3	422 3 90	} 7	8	345 325	6 5	6 a4	171 159	4	2 2
4 5	365	ľ	i i	315	5	4	150	5 6	2
		1				_	100		_
6	355	U I		290	5	4	144	6	2
7 8	370 335	} 5	4	260 255	5 5	4 a3	136 201	8 13	3 7
9	305	[[251	5	3	360	30	29
10	300	י		227	4	2	275	19	14
11	305	6	5	243	4			100	900
12	661	40	71	243	5	3 3	630 1,430	190 1,030	323 3,980
13	603	36	59	247	17	11	603	170	277
14	758	41	84	526	22	31	438	29	34
15	1,430	67	a 259	444	13	16	370	17	17
16	950	42	108	340	8	7	320	17	15
17 [771	28	58	300	8	6	275	13	10
18 19	691 625	16 15	30 25	280 251	5 4	3	239 231	14 10	9
20	586	12	19	251	5	3	345	25	23
1	***		l i				1	} i	
21 22	526 603	10 19	14 31	235 295	8 17	5 14	247 208	13	9
23	515	16	22	295 449	75	91	190	10	6 3
24	488	13	a 17	360	36	35	168	7	3
25	526	15	21	270	17	12	156	5	a 2
26	570	21	32	243	10	7	156	2	1
27	504	15	20	215	7	4	159	5	2
28	471	8	10	194	6	3	144	5	2
29 30	432 405	11 8	13 9	201 280	6 14	3	136	4	1 1
31				247	14	11 9	122	i	
Total.	16,143		967	9,127		325	8,531		4,801
				-,, _		320		L	4,001
==		July				323	0, 331	September	4,001
		July 3			August			September 7	
1	117 102	3 3	1 1	82 90	August 11 11	2 a 3	476 416	September 7 6	9 a7
1 2 3	117 102 103	3 3 3	1 1 1	82 90 76	August 11 11 10	2 a 3 2	476 416 476	7	9
1 2 3 4	117 102 103 110	3 3 3 3	1 1 1 2 a1	82 90 76 106	August 11 11 10 7	2 a 3 2 2	476 416 476 778	7	9
1 2 3 4 5	117 102 103 110 97	3 3 3 3 3	1 1 1 2 21 1	82 90 76 106 94	August 11 11 10 7 29	2 a3 2 2 7	476 416 476 778 608	7 6	9
1	117 102 103 110 97	3 3 3 3 3	1 1 1 2 1 1 1	82 90 76 106 94	August 11 11 10 7 29 27	2 a 3 2 2 7	476 416 476 778 608	7	9 a7
1	117 102 103 110 97 89 86	3 3 3 3 4 4	1 1 1 a1 1 1	82 90 76 106 94 80 194	August 11 11 10 7 29 27 264	2 a3 2 2 7 6	476 416 476 778 608 520 449	7 6	9 a7
1	117 102 103 110 97 89 86 90 220	3 3 3 3 4 4 3 15	1 1 1 2 1 1 1 1 1 1 9	82 90 76 106 94 80 194 649 405	August 11 11 10 7 29 27 264 659 223	2 a3 2 2 7 6 138 s1,290 244	476 416 476 778 608 520 449 395 360	7 6	9 a7
1 2 3 5 6 8	117 102 103 110 97 89 86 90	3 3 3 3 4 4 3	1 1 2 a1 1 1 1	82 90 76 106 94 80 194 649	August 11 11 10 7 29 27 264 659	2 a 3 2 2 7 6 138 s1,290	476 416 476 778 608 520 449 395	7 6	9 a7
1	117 102 103 110 97 89 86 90 220	3 3 3 3 3 4 4 4 3 15	1 1 1 2 1 1 1 1 1 1 9 s302	82 90 76 106 94 80 194 649 405	August 11 11 10 7 29 27 264 659 223 74	2 a3 2 2 7 6 138 s1,290 244 39	476 416 476 778 608 520 449 395 360 355	7 6	9 a7
1	117 102 103 110 97 89 86 90 220 246 762 243	3 3 3 3 3 4 4 4 3 15 184 647	1 1 1 2 1 1 1 1 1 9 8302 1,330	82 90 76 106 94 80 194 649 405 194 156 863	August 11 11 10 7 29 27 264 659 223 74 32 307	2 a3 2 2 7 6 138 s1,290 244 39	47 6 41 6 47 6 77 8 60 8 52 0 44 9 39 5 36 0 35 5 34 5 32 0	7 6	9 a7
12345	117 102 103 110 97 89 86 90 220 246 762 243 159	3 3 3 3 4 4 3 15 184 647 148 35	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440	August 11 11 10 7 29 27 264 659 223 74 32 307 687	2 a3 2 2 7 6 8 13 8 1,290 244 39 13 715 715	476 416 476 478 608 520 449 395 360 355 345 320 295	6	9 a 7 8
1	117 102 103 110 97 89 86 90 220 246 762 243 159	3 3 3 3 4 4 4 3 15 184 647 148 35 24	1 1 1 1 1 1 1 1 1 9 5 302 1,330 97 15	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,980	August 11 10 7 29 27 264 659 223 74 32 307 687 223	2 a3 2 2 7 6 138 s1,290 244 39 13 715 11,900 1,250	476 416 476 778 608 520 449 395 360 355 345 320 295 280	6	9 a 7 8
12345667891011121314151415	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115	3 3 3 3 4 4 3 15 184 647 148 35	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440	August 11 11 10 7 29 27 264 659 223 74 32 307 687	2 a3 2 2 7 6 8 13 8 1,290 244 39 13 715 715	476 416 476 478 608 520 449 395 360 355 345 320 295	6	9 a 7 8
12345	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115	3 3 3 3 3 4 4 4 3 15 184 647 148 35 24 15	1 1 1 21 1 1 1 1 1 1 9 5 302 1,330 97 15 9 5	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,070 1,110	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260	2 a 3 2 2 2 7 7 6 8 138 \$1,290 244 39 13 715 11,900 1,250 1,450 243	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275	6	9 a 7 8
1	117 102 103 110 97 86 90 220 246 762 243 159 136 115	3 3 3 3 3 3 4 4 4 3 3 155 184 647 148 35 24 15 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260 81 254	2 a 3 2 2 2 7 7 6 138 s 1,290 244 39 1,250 1,450 1,890	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275	6	9 a 7 8
1	117 102 103 110 97 86 90 220 246 762 243 159 136 115 94 92 74	3 3 3 3 3 4 4 4 3 15 184 647 148 35 24 15	1 1 1 21 1 1 1 1 1 1 9 5 302 1,330 97 15 9 5	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,070 1,110	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260	2 a 3 2 2 2 7 6 6 138 s 1,290 244 39 13 715 11,900 1,250 1,450 243 1,890 22,600	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275	6	9 a 7 8
12345	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115	3 3 3 3 3 3 4 4 4 3 5 15 184 647 148 35 24 15 11 10 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,980 2,070 1,110 2,760 22,600	August 11 11 10 7 29 27 264 659 223 23 74 32 307 687 223 260 81 254 371	2 a 3 2 2 2 7 7 6 138 s 1,290 244 39 1,250 1,450 1,890	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275	6	9 a 7 8
12345566789101112131415151617181920	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115 94 92 94 97 478	3 3 3 3 3 3 4 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,070 1,110 2,760 22,800 19,500 2,830	August 11 11 10 7 29 264 659 223 74 32 307 687 223 260 81 254 371 170 127	2 a 3 2 2 2 7 7 6 138 s 1, 290 244 39 13 715 11, 900 1, 250 1, 450 22, 600 8, 950 970	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 243 247 247 265	6	9 a 7 8
1	117 102 103 110 97 89 86 90 220 246 762 243 159 1315 115 96 94 94 97 78	3 3 3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 7 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070 1,110 2,760 22,600 19,500 2,830 1,800	August 11 11 10 7 29 264 659 223 74 32 307 687 223 260 81 254 371 170	2 a 3 2 2 2 7 7 6 138 s 1,290 244 39 13 715 11,900 1,250 1,450 243 1,890 22,600 8,950	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 265 243 247 247 265	6	9 a 7 8
1	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115 94 92 74 78	3 3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 6 6 6 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070 1,110 2,760 22,600 19,500 2,830 1,800 1,370 1,370	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260 81 254 371 170 127 74 42 77	2 a 3 2 2 2 7 7 6 8 1.38 s 1,290 244 39 11,250 1,450 1,250 1,450 22,600 8,950 970 360 155 274	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 265 243 247 247 245	6	9 a 7 8
1	117 102 103 110 97 89 86 90 220 246 762 243 159 136 915 94 74 78	3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 6 6 6 10	1 1 1 1 1 1 1 9 s 302 1,330 97 15 9 5 3 a 3 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070 1,110 2,760 2,600 19,500 2,830 1,800 1,370 1,320 978	August 11 11 7 29 264 659 74 32 74 32 76 87 223 74 32 77 42 77 74 42 77 50	2 a 3 2 2 2 7 7 6 8 138 s 1, 290 244 39 13 715 11, 900 1, 250 1, 450 22, 600 8, 950 970 360 155 274 132	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 243 247 247 247 247 265 239	6	9 a 7 8
1	117 102 103 110 97 89 86 90 220 246 762 243 159 136 115 94 92 74 78	3 3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 6 6 6 6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070 1,110 2,760 22,600 19,500 2,830 1,800 1,370 1,370	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260 81 254 371 170 127 74 42 77	2 a 3 2 2 2 7 7 6 8 1.38 s 1,290 244 39 11,250 1,450 1,250 1,450 22,600 8,950 970 360 155 274	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 265 243 247 247 245	6	9 a 7 8
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1	117 102 103 110 97 86 90 220 246 762 243 136 115 96 94 92 74 78 69 76 69 74 150	3 3 3 3 3 3 3 4 4 4 3 5 15 184 647 148 35 24 15 11 10 7 7 6 6 6 10 53 82 46	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,080 2,070 1,110 2,760 22,600 19,500 2,830 1,800 1,370 1,370 1,320 978 798	August 11 11 10 7 29 27 264 659 223 74 32 307 687 223 260 81 254 371 170 127 74 42 77 50 21	2 a 3 2 2 2 7 7 6 8 1.38 8 1,290 244 39 13 1,250 1,450 1,250 1,450 22,600 8,950 970 360 155 274 132 45 36 24	476 416 476 778 608 520 449 395 360 355 345 320 295 280 275 265 243 247 247 265 239 212 227 265 295	6	9 a 7 8 3 3
1	117 102 103 110 97 89 86 90 220 246 762 243 159 1315 115 96 94 92 74 78 69 76 69 74	3 3 3 3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 6 10 53 82 46 624	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,070 1,110 2,760 22,600 19,500 2,830 1,800 1,370 1,320 978 798	August 11 11 10 7 29 264 659 74 32 307 687 223 74 32 307 687 223 77 32 307 687 223 260 81 254 371 170 127 74 42 77 50 21	2 a 3 2 2 2 7 7 6 138 s 1, 290 244 39 13 715 11, 900 1, 250 1, 450 22, 600 8, 970 360 155 274 132 45 36	476 416 476 476 778 608 520 449 395 360 355 345 280 275 280 275 243 247 247 247 247 265 239 212 227 265 295	6	9 a 7 8 3 3
1	117 102 103 110 97 89 86 90 220 246 762 243 159 136 94 94 74 78 69 74 150	3 3 3 3 3 3 3 4 4 4 3 3 15 184 647 148 35 24 15 11 10 7 7 6 6 6 10 53 82 46 24 14 12	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	82 90 76 106 94 80 194 649 405 194 156 863 6,440 2,070 1,110 2,760 2,600 19,500 2,830 1,800 1,370 1,320 978 798 703 625 570 520 482	August 11 11 10 7 29 264 659 74 32 74 32 7687 223 74 321 170 127 74 42 77 75 21 19 14 11 8 8	2 a 3 2 2 2 7 7 6 8 138 s 1, 290 244 39 13 7 15 11, 900 1, 250 1, 450 22, 600 8, 950 970 360 155 274 132 45 36 24 17 11 10	476 416 476 778 608 520 449 395 360 355 345 280 275 265 243 247 247 265 227 265 227 247 265 227 227 265 227 227 247 265 227 227 265 227 227 227 227 227 227 227 227 227 22	6	9 a 7 8 3 3
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s Computed by subdividing day. a Computed from estimated concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued

RAPIDAN RIVER NEAR CULPEPER, VA. -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal lube; D, decoraticno; P, pipette; S, siever, M, in native water; W in distilled water: C, chemically discorated; M, mechanically discorated.

-		Methods of analysis		BN	BWMC	BN	BWMC	BWMC
			0.500 1.000	1	100	86	66	
			0.500	100	66	96	96	100
			0.350					
		llimeters	0,250	66	97	06	91	66
		ize, in mi	0.125	94	91	81	83	96
mag r		Percent finer than indicated size, in millimeters	0.008 0.016 0.031 0.062 0.125	06	87	75	16	88
arry areho	sediment	ner than	0.031	29	80	26	61	88
THE CHAIR	Suspended sediment	Percent fi	0.016	41	69	37	45	81
raca, mr,	Š		0.008	29	99	25	35	67
ally dispe			0.002 0.004	16	42	13	17	36
, cliente			٦					
W, in distilled water, C, chemically dispersed, M, mechanically dispersed		Concentration of suspension	analyzed (ppm)	2,520	1,230	1,720	2,120	775
, H		Concentration	of sample (ppm)	901	465	089	929	339
	Water	tem- per-						
		Discharge	Ì	3,840	2,530	7,670	7,670	18,100
		Time		5:13 p. m.	7:59 a.m.	12:12 p. m.	12:12 p. m.	7:05 а. т.
		Date of collection		Dec. 14, 1954 5:13 p.m.	Dec. 30	Aug. 13, 1955	Aug. 13	Aug. 18

YORK RIVER BASIN

HUDSON CREEK NEAR BOSWELLS TAVERN, VA.

LOCATION: --At gaging station at bridge on U. S. Highway 15, 2.7 miles south of Boswells Tavern, Louisa County, 4.8 miles north of Zion Crossroads, 5 miles upstream from mouth, and 10 miles west of Louisa.

DRAINAGE AREA.--4.1 square miles proximately.

RECORDS ARAILABLE.-Chemical analyses: October 1951 to September 1952.

Water temperatures: October 1954 to September 1955.

Sediment records: Periodic determinations of suspended sediment, September 1951 to September 1955.

Sediment records: Periodic determinations of suspended sediment, September 1955 given in MSP 1382.

EXTREMES, 1954-55.--Water temperatures: Maximum, 80° F July 6, 9, 10; minimum freezing point on many days in January and February.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1382.

r 1955	
954 to Septembe	7 duemocan
water year October 1	the state
ter year	
ture (°F) of water, wal	Comes do monount control de desperant
(°F) of	(B)
Temperature (

NOVEMBER NOVEMBER	.	Max mir max 42 33 38 39 39 39 39 39 39 39 39 39 39 39 39 39	Ē	January max min	+	Ę۲	11	March	Aprı	- I	May	_	June	•					September	
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	3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	38 40	35	44 40	33	32	46	41	09	49	62	24	64	28	74	7	18	92	69	89
	38 39 39	38	_	_	_	35	51	45	;	:	99	29	99	26	82	62	80	28	2	98
	38 39 39	38		_		32	25	20	;	;	67	29	67	29	49	74	49	77	2	67
	38 33	78	32			32	25	47	:	:	99	28	20	62	80	7.2	- 62	- 22	92	67
	38 33		32		_	32	48	42	;	;	64	54	99	49	62	2	- 62	- 22	74	. 89
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		36	33			35	54	46	62	48	;	;	61	28	8	9.	89	65	1	;
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_	\$	4	 8			32	23	51	63	22	09	54	99	9	15	69	74	67	99	29
_	4	40				32	57	51	65	54	61	53	89	09	92	72	75	02	89	62
	45	\$	_			39	22	46	63	54	61	26	69	61	77	73	75	72	69	65
45	200	43	es :	34 32	- 4	34	25	47	28	22	9	21	69	63	42	7.4	74	72	20	67
	2	7		_		83	848	45	63	2 5	62	25	99	64	44	7.4	74	2	67	99
	23	eeeee		-		34	25	46	69	200	64	22	20	63	92	72	92	72	2	99
_	46	33				35	20	48	99	09	67	28	72	65	92	72	92	7.1	99	62
46 46	4	33		36 32	44	\$	22	48	67	28	64	62	72	65	9.	72	18	72	64	62
_	\$	33	_	_	_	44	54	44	99	28	- 89	62	77	99	92	74	75	72	62	62
_	42	35	_		_	40	22	46	65	61	20	64	7.5	67	22	-23	73	- 69	63	62
	38	34	32	36 32		36	2	46	62	28	20	65	20	99	82	73	20	89	65	62
	60	3.4				36	20	4.9	ŭ	ď	20	84	9	84	1	7.4		67	63	g
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46	41	38	35	38 36	39	32	52	45	61	54	65	29	89	62	77	73	74	20	49	63

YORK RIVER BASIN--Continued

HUDSON CREEK NEAR BOSWELLS TAVERN, VA.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1954 to September 1955

		Suspended	l sediment
Date	Mean discharge (cfs)	Mean concentration (ppm)	Discharge (lbs. per day)
Oct. 18, 1954	0.60	9	29
Oct. 25	. 48	3	8
Nov. 1	. 90	10	48
Nov. 8	. 82	3	13
Nov. 15	.74	4	16
Nov. 22	1.3	4	28
Nov. 29	7.0	27	1,020
Dec. 6	1.5	2	16
Dec. 13	2.8	2	30
Dec. 20	2.7	4	58
Dec. 27	1.6	3	26
Jan. 3, 1955	2. 5	8	108
Jan. 10	1.8	3	29
Jan. 17	2.5	4	54
Jan. 24	2.0	3	32
Jan. 31	1.5	3	24
Feb. 7	16	23	1,990
Feb. 14	2. 6	4	56
Feb. 21	2.0	9	97
Feb. 28	6.8	7	257
Mar. 7	16	19	1,640
Mar. 14	2.9	3	47
Mar. 21	7.0	14	528
Mar. 28	3.1	3	50
Apr. 4	2.3	3	37
Apr. 11	2.7	4	58
Apr. 25	13	19	1,330
May 2	2.6	4	56
May 9	1.5	6	49
May 16	2.2	5	59
May 23	5.8	11	344
May 30	2.3 .77	11 5	136 21
Jane U		9	21
June 13	2.0	6	65
June 20	1.1	j 4	24
June 27	. 50	5	13
July 4	. 31	5	8
July 11	3. 2	30	518
July 18	. 37	6	12
July 25	. 56	5	15
Aug. 1	. 34	3	5
Aug. 8	. 63	2	7
Aug. 15	9.8	17	898
Aug. 22	1.9	3	31
Aug. 29	1.2	4	26
Sept. 5	3.7	3	60
Sept. 12	. 93	12	60
Sept. 19	1.0	3	16
Sept. 26	. 85	1 1	4

JAMES RIVER BASIN

JAMES RIVER AT BUCHANAN, VA.

LOCATION.--At bridge on U. S. Highway 11, 300 feet downstream from gaging station at Buchanan, Botetourt County, 700 feet upstream from Purgatory Creek, 1 miles downstream from Looney Creek, and at mile 301.2.

DRAINAGE AREA.--2,084 square miles.

DRAINAGE AREA: --2,084 square miles,
RECORDS AVAILABLE. --Chemical analyses: April 1929 to March 1930, October 1947 to
September 1948, October 1951 to September 1952.
Water temperatures: October 1947 to September 1948, May 1951 to September 1955.
Sediment records: May 1951 to September 1955.
EXYREMES, 1954-55. --Specific conductance: Maximum daily, 509 micromhos Oct. 5; minimum daily, 76.0 micromhos Feb. 8.
Water temperatures: Maximum, 87°F July 5; minimum, freezing point Dec. 21, 22.
Sediment concentrations: Maximum daily, 980 ppm Oct. 15; minimum daily, 1 ppm on many days. days.

days.
Sediment loads: Maximum daily, 76,300 tons Mar. 7; minimum daily, 1 ton Sept. 11.

EXTREMES, 1947-48, 1951-55.--Water temperatures: Maximum, 87°F July 5, 1955; minimum, freezing point Dec. 20, 1951, Dec. 21, 22, 1954.

Sediment concentrations (1951-55): - Maximum daily, 980 ppm Oct. 15, 1954; minimum daily, 1 ppm on several to many days during each year.

Sediment loads (1951-55): Maximum daily, 76,300 tons Mar. 7, 1955; minimum daily, 1 ton Oct. 26-31, Nov. 5-9, 1952, Jan. 1-3, 6-10, 1954, Sept. 11, 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (° F) of water, water year October 1954 to September 1955

			Temperat									_
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Jıly	Aug.	Sept.
1	69	49	43	43	36	49	51	63	71	76	81	76
2	72	42	42	44	38	50	53	61	72	84	80	74
3	73	43	42	46	39	48	52	65	73	86	81	71
4	72	43		44	38	46	54	66	74	86	86	71
5	72	42	41	46	39	51	55	73	76	87	86	73
6	70	44	38	47	39	52	55	70	78	83	85	71
7	68	45	36	46	40	46	54	69	74	81	85	73
8	61	48	38	43	41	43	56	66	72	80	80	74
9	59	46	37	42	40	44	57	65	69	81	76	73
10	60	46	39	41	43	47		66	68		75	75
11	61	44	39	39	43	49	58	69	68	78	78	74
12	64	46		40		53	57	69	68	77	77	78
13	67	48			34	46		67	66	76	75	72
14	69	44	38	39	33	43	58	64	66	78	73	70
15	60	47	41	. 40	37	52	59	66	66	82	76	73
16	57	47	41	40	41	52	60	68	68	84	77	76
17	54	49	40	39	42	50	61	69	75	80	76	73
18	55	51	41	38	45	50	60	70	75	83	74	72
19	55	54	40	37	43	48	60	70		83	73	74
20	55	55	38	36	43	48	65		72	80	77	73
21	55	52	32	36	46	48	66	73	75	82	75	73
22	56	53	32	35	47	55	68	73	76	85	77	72
23	52	47	37	36	47	49	66	72	76	84	78	70
24	51	48		36	47	48	65	76	76	83	76	70
25	57	47	38	37	43	48	63	73	77	81	77	69
26		45	39	38	44	47	60	77	72	84	79	68
27	58	42	42	37	47	42	58	78	76	83	В0	66
28	58	42	41	36	47	47	58	79	78	84	81	70
29		43	45	35		44	64	78	70	81	81	67
30	49	44	47	35		44	64	76	78	79	83	68
31	48		45	35		50		73			77	
age	61	47	40	40	42	48	59	70	73	82	79	72

JAMES RIVER BASIN

JAMES RIVER BASIN -- Continued

JAMES RIVER AT BUCHANAN, VA .-- Continued

Suspended sediment, water year October 1954 to September 1955

			oraca pour	ent, water y			T .	December	
		October			November			December	
	Mean		d sediment	Mean		d sediment	Mean		l sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tens
	charge	concen- tration	per	charge	concen-	per	charge	concen-	ber
	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	322	4	3	1,120	3	9	2,400	5	32
2	446	7	8	1,020	2	6	2,120	3	17
3	605	17	28	950	2	5	1,950	2	11
4	452	11	13	902	2	5	1,780	2	a 10
5	405	8	9	878	3	7	1,680	3	14
6	380	5	5	854	4	9	2,000	5	27
7	345	5	5	838	2	5	1,950	5	26
8	320	5	4	822	2	4	1,680	3	14
9	320	6	5	806	3	7	1,730	3	14
10	320	6	5	782	2	4	3,530	15	143
11	320	7	6	766	2	4	3,800	23	236
12	322	ż	ě	750	2	4	2,860	13	a 100
13	327	6	5	726	2	' 4	2,520	8	a 54
14	318	5	4	710	2	4	3,180	7	60
15	10, 900	980	s 46, 300	696	2	4	6,140	27	448
16	30,000	613	49,700	675	2	4	5,290	18	257
17	10,000	252	6,800	. 668	2	4	3,890	7	74
18	4,000	46	497	710	2	4	3,360	5	45
19	2,500	16	108	1,130	24	73	5,090	12	165
20	2,000	7	39	4, 160	88	988	5,090	11	151
21	1,500	4	16	10,600	128	3,660	3,800	3	31
22	1,300	4	14	9,000	49	1,190	2,860	2	15
23	1,100	4	12	5,090	17	234	2,520	3	20
24	900 800	3 2	7 4	3,530 2,860	8 4	76 31	2,400 2,220	3 1	a 19 6
25	550	•	*	2,000	-	31	2,220		·
26	700	2	a4	2,340	4	25	2,000	1 1	5
27	700	3	6	2,060	3	17	1,780	1 1	5
28	800	3	6	1,840	3	15	1,680	1 1	5
29	830 1,100	4 5	a 9 15	1,840 2,460	3 4	15 27	3,280 21,000	18 235	159 18,300
30		5		2,400	* 1		[21,000		1.,500
31	1,180	9 1	16				21.100	183	1C. 400
31	1, 180 75, 512			61 583		6 444	21,100 126,680	183	10,400 25,863
Total.	75, 512		103,659	61,583		6,444	21,100 126,680		10,400 25,863
Total.	75, 512	 January	103,659		 February		126,680	March	25, 863
Total.	75, 512 9, 750	January	1,300	910	February	2	126,680	March	5, 090
1	75, 512 9, 750 6, 360	 January 49 18	1,300 309	910 1,090	February	2 3	126,680 16,100 20,400	March	5, 090 12, 400
Total.	9,750 6,360 4,710	January	1,300	910 1,090 1,330	February 1 1 2	2 3 7	126,680 16,100 20,400 11,200	March	5, 090
1 2	75, 512 9, 750 6, 360	 January 49 18 9	1,300 309 114	910 1,090	February	2 3	126,680 16,100 20,400	March 117 225 52	5, 090 12, 400 1, 570
1 2 3 4	9,750 6,360 4,710 3,710 3,180	January 49 18 9 6 5	1,300 309 114 60 43	910 1,090 1,330 1,950 1,680	February 1 1 2 3 5	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400	March 117 225 52 29 234	5, 090 12, 400 1, 570 685 s 12, 000
Total. 1 2 3 4 5	9,750 6,360 4,710 3,710 3,180 2,860	January 49 18 9 6 5	1,300 309 114 60 43	910 1,090 1,330 1,950 1,680	February 1 1 2 3 5	2 3 7 16 23 s1,640	126,680 16,100 20,400 11,200 8,750 14,400 42,800	March 117 225 52 29 234 660	5, 090 12, 400 1, 570 685 s12,000 7€, 300
1	9,750 6,360 4,710 3,710 3,180 2,860 2,580	January 49 18 9 6 5	1,300 309 114 60 43 31 209	910 1,090 1,330 1,950 1,680 2,600 23,600	February 1 1 2 3 5 138 336	2 3 7 16 23 \$1,640 21,400	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600	March 117 225 52 29 234 660 428	5, 090 12, 400 1, 570 685 s 13, 000 7€, 300 5C, 400
Total. 1 2 3 4 5	9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,340 2,170	January 49 18 9 6 5 4 3 2 2	1,300 309 114 60 43	910 1,090 1,330 1,950 1,680	February 1 1 2 3 5	2 3 7 16 23 s1,640	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400	March 117 225 52 29 234 660	5, 090 12, 400 1, 570 685 s12,000 7€, 300
1 2 3 5 6 7 8	9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,340	January 49 18 9 6 5 4 3 2	1,300 309 114 60 43 31 209 13	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000	February 1 1 2 3 5 138 336 126	2 3 7 16 23 \$1,640 21,400 7,140	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600	March 117 225 52 29 234 660 428 110	5,090 12,400 1,570 685 s15,000 7€,300 5C,400 5,760
1	9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,340 2,170 2,060	January 49 18 9 6 5 4 3 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590	February 1 1 2 3 5 138 336 126 35 17	2 3 7 16 23 s1,640 21,400 7,140 992 302	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000	March 117 225 52 29 234 660 428 110 41 22	25,863 5,090 12,400 1,570 685 s12,000 7€,300 50,400 50,760 1,240 475
1	9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,340 2,170	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290	February 1 1 2 3 5 138 336 126 35	2 3 7 16 23 s1,640 21,640 21,400 7,140 992 302	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140	March 117 225 52 23 234 660 428 110 41	5, 090 12, 400 1, 570 685 s1€, 000 7€, 300 5C, 400 5, 760 1, 240
Total. 1	75, 512 9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,170 2,060 2,000 1,900 1,780	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 10 a10	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160	February 1 1 2 3 5 138 336 126 35 17 10 7 5	2 3 7 16 23 \$1,640 21,400 7,140 992 302 143 a 100 56	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290	March 117 225 52 29 234 660 428 110 41 22 17 18 12	25,863 5,090 12,400 1,570 685 s15,000 7€,300 5,760 1,240 475 282 277 171
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 710 3, 180 2, 580 2, 580 2, 170 2, 060 1, 900 1, 780 1, 680	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 11 0 210 9	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6	2 3 7 16 23 s1,640 21,400 7,140 992 302 143 a100 56	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620		25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137
Total. 1	75, 512 9,750 6,360 4,710 3,710 3,180 2,860 2,580 2,170 2,060 2,000 1,900 1,780	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 10 a10	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160	February 1 1 2 3 5 138 336 126 35 17 10 7 5	2 3 7 16 23 \$1,640 21,400 7,140 992 302 143 a 100 56	16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290	March 117 225 52 29 234 660 428 110 41 22 17 18 12	25,863 5,090 12,400 1,570 685 s15,000 7€,300 5,760 1,240 475 282 277 171
Total. 1	75, 512 9, 750 6, 860 4, 710 3, 710 3, 180 2, 860 2, 580 2, 340 2, 170 2, 060 1, 900 1, 900 1, 680 1, 580	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 11 0 210 9	910 1,990 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 5	2 3 7 16 23 s1,640 21,400 7,140 992 302 143 a100 56	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250	March 117 225 52 29 234 660 428 110 41 22 17 18 12 11 8	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137
Total. 1	75, 512 9, 750 6, 860 4, 710 3, 710 3, 180 2, 860 2, 190 2, 190 1, 900 1, 900 1, 580 1, 480 1, 480	January 49 18 9 6 5 4 2 2 2 2 2 2 2 2 2 2 3	103,659 1,300 309 114 60 43 31 1209 13 12 11 11 10 210 9 9 8 8 12	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6	2 3 7 16 23 51,640 21,400 7,140 992 302 143 a100 56 56 44 46 42	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800		25,863 5,090 12,400 1,570 685 s15,000 7€,300 5,760 1,240 475 282 277 171 137 92 445 1,400
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 110 3, 180 2, 860 2, 580 2, 940 1, 960 1, 980 1, 480 1, 480 1, 480	January 49 18 8 6 5 4 3 2 2 2 2 2 2 3 3	1,300 309 114 60 43 31 209 13 12 11 11 10 a10 9 9	910 1,990 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,860 2,580 2,580 2,580 2,580	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 5 6 6 6	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500	March 117 225 52 234 660 428 110 41 22 17 18 12 11 8 25 48 35	25,863 5,090 12,400 1,570 685 s15,000 76,300 50,400 1,240 475 282 277 171 137 92 445 1,400 898
Total. 1	75, 512 9,750 6,366 4,710 3,710 3,180 2,860 2,580 2,170 2,060 1,780 1,780 1,480 1,480 1,480 1,480 1,480		103,659 1,300 309 114 60 43 31 209 13 12 11 11 10 9 9 8 12 8 4 4	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270 2,580 2,580 2,520 2,520 2,520	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9	2 3 7 16 23 \$1,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500 11,800	March 117 225 52 23 234 660 428 110 41 22 17 18 12 11 8 25 48 35 36	25,863 5,090 12,400 1,570 685 s12,000 76,300 50,400 1,240 475 282 277 171 137 92 445 1,400 898 1,150
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 110 3, 180 2, 860 2, 580 2, 940 1, 960 1, 980 1, 480 1, 480 1, 480	January 49 18 8 6 5 4 3 2 2 2 2 2 2 3 3	1,300 309 114 60 43 31 209 13 12 11 11 10 a10 9 9	910 1,990 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,860 2,580 2,580 2,580 2,580	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 5 6 6 6	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500	March 117 225 52 234 660 428 110 41 22 17 18 12 11 8 25 48 35	25,863 5,090 12,400 1,570 685 s15,000 76,300 50,400 1,240 475 282 277 171 137 92 445 1,400 898
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 170 2, 060 1, 780 1, 780 1, 480 1, 480 1, 480 1, 480 1, 380		103,659 1,300 309 114 60 43 31 209 13 12 11 11 10 9 9 8 12 8 4 4	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270 2,580 2,580 2,520 2,520 2,520	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9	2 3 7 16 23 \$1,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500 11,800	March 117 225 52 23 234 660 428 110 41 22 17 18 12 11 8 25 48 35 36	25,863 5,090 12,400 1,570 685 s12,000 76,300 50,400 1,240 475 282 277 171 137 92 445 1,400 898 1,150
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 170 2, 060 1, 780 1, 480 1, 480 1, 480 1, 480 1, 380 1, 380 1, 380 1, 1, 390 1, 1, 190	January 49 18 9 6 5 5 4 3 2 2 2 2 2 2 1 2 2 3 3 3 3 3	1,300 309 114 60 43 31 209 13 12 11 11 10 a10 9 8 12 4 7	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,860 2,580 2,580 2,170 2,000 1,950	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 9 7 9	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500	March 117 225 52 234 660 428 110 41 22 17 18 12 11 8 25 48 35 36 10 11 77	25, 863 5, 090 12, 400 1, 570 685 s15, 000 76, 300 50, 400 475 282 277 171 137 92 445 1, 400 243 203 1, 980
Total. 1	75, 512 9,750 6,860 4,710 3,180 2,860 2,340 2,170 2,060 1,780 1,480 1,480 1,480 1,480 1,380 1,380 1,190 1,290 1,290 1,290	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 11 00 a10 9 9 8 8 12 8 4 7 10 6 7	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270 2,580 2,520 2,580 2,520 2,170 2,000 1,950 2,720	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9 7 7 9 10	2 3 7 16 23 51,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55 41	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 4,620 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000	March 117 225 52 23 234 660 428 110 41 22 17 18 8 25 48 35 36 10 11 77 235	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 57, 400 57, 760 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 13, 300
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 940 1, 900 1, 780 1, 480 1, 480 1, 480 1, 480 1, 480 1, 1, 280 1, 1, 280 1, 1, 280 1, 2	January 49 18 6 6 5 4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1,300 309 114 600 433 31 209 13 12 11 11 110 a10 9 9 8 12 8 4 7 7	910 1,990 1,330 1,950 1,680 23,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,860 2,580 2,580 2,170 2,000 1,950 2,720 6,330	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 9 7 7 9 10 18	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000 11,200	March 117 225 52 234 660 428 110 41 22 17 18 12 11 11 8 25 48 35 36 10 11 77 235 60	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 13, 300 1, 980
Total. 1	75, 512 9,750 6,860 4,710 3,180 2,860 2,340 2,170 2,060 1,780 1,480 1,480 1,480 1,480 1,380 1,380 1,190 1,290 1,290 1,290	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	103,659 1,300 309 114 60 43 31 209 13 12 11 11 00 a10 9 9 8 8 12 8 4 7 10 6 7	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270 2,580 2,520 2,580 2,520 2,170 2,000 1,950 2,720	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9 7 7 9 10	2 3 7 16 23 51,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55 41	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 4,620 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000	March 117 225 52 23 234 660 428 110 41 22 17 18 8 25 48 35 36 10 11 77 235	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 57, 400 57, 760 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 13, 300
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 170 2, 060 1, 780 1, 780 1, 480 1, 480 1, 480 1, 380 1, 380 1, 290 1, 1, 290 1, 210 1,		103,659 1,300 309 114 60 43 31 209 13 122 11 11 10 210 210 28 8 4 7 10 6 6 7 7 7 16	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,580 2,580 2,520 2,286 2,170 2,900 1,950 4,160 3,440 4,160	February 1 1 2 3 5 138 336 126 335 17 10 7 5 6 6 6 9 7 7 9 10 18 21	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000 12,200 8,000 6,590	March 117 225 52 234 660 428 110 41 22 17 18 12 11 8 25 48 35 36 10 11 77 235 600 17	25, 863 5, 090 12, 400 1, 570 685 s15, 000 76, 300 50, 400 6, 760 1, 240 475 282 277 171 137 92 445 1, 400 243 203 1, 980 13, 300 1, 980 13, 300 1, 980 1,
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 530 2, 170 2, 060 1, 780 1, 680 1, 480 1, 480 1, 480 1, 480 1, 480 1, 200	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1,300 309 114 603 433 31 209 13 12 11 11 10 a10 9 9 9 8 12 2 8 4 7 7 7 16 6 3	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,580 2,580 2,580 2,580 2,580 2,720 6,330 5,700 4,340 5,020	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 9 7 7 9 10 18 21 19 89	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000 12,200 8,000 6,590 6,590 6,590 6,590 12,200 8,000	March 117 225 52 234 660 428 110 41 22 17 18 12 11 8 25 48 35 36 10 11 77 235 600 17	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 13, 300 1, 980 367 160 a 108
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 580 2, 580 2, 170 2, 060 1, 780 1, 480 1, 480 1, 480 1, 480 1, 1, 480 1, 1, 480 1, 1, 480 1, 1, 480 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	January 49 18 8 6 5 5 4 3 2 2 2 2 2 2 2 2 2 2 2 1 1 2 1 1	1,300 309 114 60 43 31 209 13 12 21 11 11 10 210 210 210 210 210 210	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,580 2,580 2,520 2,286 2,170 2,900 1,950 4,160 3,440 4,160	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 9 7 7 9 10 18 21 19 89 141	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 19,400 11,200 8,000 6,140 5,700 5,290 4,620 4,250 6,590 10,800 9,500 11,800 9,000 6,820 9,500 21,000 12,200 8,000 6,590 5,700 4,800	March 117 225 52 234 660 428 110 41 22 117 18 12 111 8 25 48 35 36 10 11 77 235 60 17	25,863 5,090 12,400 1,570 685 s15,000 76,300 55,400 475 282 277 171 137 92 445 1,400 243 203 1,980 13,300 1,980 13,300 1,980
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 530 2, 170 2, 060 1, 780 1, 680 1, 480 1, 480 1, 480 1, 480 1, 480 1, 200	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 1 1 1 1	103,659 1,300 309 114 600 43 31 209 13 12 11 11 10 a10 9 9 8 12 2 8 4 7 10 6 6 7 7 16 6 6 3 3 3	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,580 2,580 2,580 2,580 2,580 2,720 6,330 5,700 4,340 5,020	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 9 7 7 9 10 18 21 19 89	2 3 7 16 23 51,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55 41 38 47 73 308 323 223 1,210 5,060	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 11,200 8,000 5,700 5,290 4,250 6,590 11,800 9,500 11,800 9,500 21,000 21,200 8,000 6,820 9,500 21,000 12,200 8,000 4,800 4,800 4,160	March 117 225 52 234 660 428 110 41 22 17 18 12 111 8 25 48 35 36 10 11 77 235 60 17 9 7 6 5 5 5 5	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 367 1, 980 367 160 a 108 78 56
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 170 2, 060 1, 880 1, 580 1, 480 1, 480 1, 480 1, 1, 800 1, 200 1, 200 1,	January 49 18 8 6 5 5 4 3 2 2 2 2 2 2 2 2 2 2 2 1 1 2 1 1	1,300 309 114 60 43 31 209 13 12 21 11 11 10 210 210 210 210 210 210	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 5,290 4,160 3,440 3,270 2,580 2,520 2,520 2,520 2,720 6,330 5,700 4,340 5,020 13,300	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9 7 7 9 10 18 21 19 89 141	2 3 7 16 23	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 11,200 8,000 5,700 5,290 4,250 6,590 10,800 9,500 11,800 9,500 12,200 8,000 6,820 9,500 12,200 8,000 6,820 9,500 12,200 8,000 6,820 9,500 12,200 8,000 6,820 9,500 12,200 8,000 12,200 8,000 12,200 8,000 13,180	March 117 225 52 234 660 428 110 41 22 117 18 12 111 8 25 48 35 36 10 11 77 235 60 17	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 55, 400 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 367 1, 980 367 160 a 108 78 56 50 60
Total. 1	75, 512 9, 750 6, 360 4, 710 3, 180 2, 860 2, 580 2, 170 2, 060 1, 780 1, 480 1, 480 1, 480 1, 480 1, 380 1, 380 1, 250 1, 250 1, 250 1, 250 1, 100 1, 10	January 49 18 9 6 5 4 3 2 2 2 2 2 2 2 2 2 2 2 1 1 1 1 1	103,659 1,300 309 114 600 43 31 209 13 12 11 11 10 a10 9 9 8 12 2 8 4 7 10 6 6 7 7 16 6 6 3 3 3	910 1,090 1,330 1,950 1,680 2,600 23,600 21,000 10,500 6,590 5,290 4,160 3,440 3,270 2,860 2,580 2,520 2,280 2,170 2,000 1,950 2,720 6,330 5,700 4,340 3,300 	February 1 1 2 3 5 138 336 126 35 17 10 7 5 6 6 6 6 9 7 7 9 10 18 21 19 89 141	2 3 7 16 23 51,640 21,400 7,140 992 302 143 a 100 56 56 44 46 42 41 55 41 38 47 73 308 323 223 1,210 5,060	126,680 16,100 20,400 11,200 8,750 14,400 42,800 43,600 11,200 8,000 5,700 5,290 4,250 6,590 11,800 9,500 11,800 9,500 21,000 21,200 8,000 6,820 9,500 21,000 12,200 8,000 4,800 4,800 4,160	March 117 225 52 234 660 428 110 41 22 17 18 12 111 8 25 48 35 36 10 11 77 235 60 17 9 7 6 5 5 5 5	25, 863 5, 090 12, 400 1, 570 685 s12, 000 76, 300 50, 400 1, 240 475 282 277 171 137 92 445 1, 400 898 1, 150 243 203 1, 980 367 1, 980 367 160 a 108 78 56

s Computed by subdividing day, a Computed from estimated concentration graph.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

JAMES RIVER BASIN -- Continued

JAMES RIVER AT BUCHANAN, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued April May June Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Mean Day disdis-Tons dis-Tons Tons concenconcenconcencharge charge charge per day per per tration tration tration day (cfs) day (cfs) (cts) (ppm) (ppm) (ppm) 1. 2,860 1,470 2,620 2,400 2,260 2..... 1,370 3. 1,320 4. 1.280 5. 2,080 1,230 1.900 1,140 1,100 7. 1,840 1,060 8. 1,730 R 9. 1,680 1.040 10. 1,520 a 8 1,520 1,230 11. 1,730 2, 250 12. 13. 1,780 a 38 2,140 14. 5,100 1,230 1,520 15.... 9,750 2.080 2,020 1.180 7,280 1,020 16..... 2,020 17. 5,290 1,730 18. 19. 4,430 3,800 1,470 1,320 a 12 3,180 20. 1,140 2.780 1,060 2,540 17 22..... 1,100 2,400 2,200 1,230 1,180 23. 24. 25, 1,180 2,080 1,960 1,100 26..... 27. 1,900 1,730 28. 29..... 1.620 30..... 1,520 31. 1,036 Total. 85,480 4,167 37, 207 25,470 July September August 1..... ā 2. 3. 4. 5. 6. 7. 8. 4 9. 10. a 20 12..... 13. 2 2 14. 15. 17. 1,600 3,880 18. 5,920 1,970 19. 20. 1,840 21. 1,420 22. 1,060 23. 24. 25. 26. 27. 28. 29. 55 30.... 31. Total. 16,307 4,573 13,457 31,484 Total discharge for year (cfs-days) 1,043,025

Total load for year (tons) s Computed by subdividing day.

a Computed from estimated concentration graph.

JAMES RIVER BASIN--Continued

JAMES RIVER AT BUCHANAN, VA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipette; S, sieve; N, in native water;

		Methods of analysis	•	BWMC	BN	BWMC	BWMC	BN
			1.000	100	100	1	1	;
			0.500	86	86	100	100	100
			0.350 0.500 1.000					
		llimeters	0.250	95	96	86	66	86
		ize, in mi	0.125	68	91	06	96	92
rsed)		Percent finer than indicated size, in millimeters	0.031 0.062 0.125 0.250	84	98	82	93	92
ally disper	ediment	er than ir	0.031	80	76	74	88	82
mechanics	Suspended sediment	ercent fir	0.016	69	55	61	18	63
sed; M,	Su	ы	0.008	51	34	47	64	46
ally disper			0.002 0.004 0.008 0.016	33	18	34	32	28
, chemica			0.002					
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	2,150	460	206	636	1.350
W, in di		Concentration	of sample (ppm)	1,810	156	367	210	526
	Water	tem- per-	ature (°F)					
		Discharge (cfs)				26,700		
		Time		7:25 p.m.	2:41 p.m.	12:44 p. m.	2:10 p.m.	1:55 p. m.
	\$	of of collection		Oct. 15, 1954	Dec. 31	Feb. 7, 1955	Mar. 2	Mar. 6

JAMES RIVER BASIN -- Continued

JAMES RIVER AT SCOTTSVILLE, VA.

LOCATION. --At gaging station at bridge on State Highway 20 at Scottsville,
Albemarle County, 6.8 miles upstream from Hardware River, and at mile 184.6.
DRAINAGE AREA. --4,571 square miles.
RECORDS AVAILABLE. --Chemical analyses: April 1930 to March 1931, October 1947 to
September 1948, October 1951 to September 1952.
Water temperatures: May 1951 to September 1955.
Sediment records: December 1950 to September 1955.
EXTREMES, 1954-55. --Specific conductance: Maximum daily, 421 micromhos Oct. 14; minimum daily, 82,3 micromhos Aug. 18.
Water temperatures: Maximum, 92°F Jnly 22; minimum, freezing point Jan. 28.
Sediment concentrations: Maximum daily, 1,294 ppm Oct. 16; minimum daily, 2 ppm on
several days.
Sediment loads: Maximum daily, 161,000 tons Mar. 7; minimum daily, 3 tons on several
days.

days. EXTREMES,

uays.

TREMES, 1950-55.--Specific conductance (1951-55): Maximum daily, 421 micromhos Oct. 14, 1954; minimum daily, 70.6 micromhos Mar. 11, 1952.

Water temperatures (1951-55): Maximum, 93°F June 26-28, July 21, 1952; minimum, freezing point Jan. 15, 1954, Jan. 28, 1955.

Sediment concentrations: Maximum daily, 1,294 ppm Oct. 16, 1954; minimum daily, 1,294 ppm Oct

1 ppm Sept. 2, 8, 1954.
Sediment loads: Maximum daily, 170,000 tons Mar. 2, 1954; minimum daily, 2 tons

Sept. 2, 8, 1954.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	50	42	45		48	52	66	74	83		77
2	79	48	43	48		50	55	65	74	85	86	74
3	80	47	40	45	33	50		68	73	86	88	72
4	81	46	40	46	34	51	55	69	75	87	90	72
5	81	49	37	45	35	50	56	72	77	89	85	75
6	80		}	48	37	54		72	80	89	88	
7	65	47	37	46	41	50		70	75	86	88	78
8	61	47	38	44	41	47	55	71	76	85	82	75
9 [64	48	37		40	48	58	70	71	86	77	74
10	68	46	38		42	50	61	70	71	84		
11	70	46	39		44	51		70	70	80	79	77
12	73	47	36	38	37	53	65	73	71	78	77	76
13	75	46	36	(35	55	60	69	70	79	75	72
14	74	48		38	35	55		65	70	80	75	
15	71	48	40	39	39	54	60	68	70	84	77	73
16	66	48	40	39	40	56	62	68	72	86	78	76
17	59	49	39	39	43	54	62	1	72	89	77	75
18	56	52		48	41	54	60	69	72	89		76
19	55	50	41	36	42	51	61	72	74	87	75	74
20	55	56	40	37		50	65	73	77	86	77	77
21	==	54	37	35	44	50	64	75	81	88	78	75
22	55	54	35	37		50	67	75		92	80	72
23	57	50	38	37	49	51	68	76	82	90	79	70
24	59	49	39	36	47	53	68	79	80	85	78	70
25	59	48	37	36	45	50	67	78	81	88	76	72
26	59	45	34	37	46	50	64	79	78	89	76	69
27	60	44	39		47		61		78	90	80	69
28	59	43	42	32		45	61	80	79	90	80	71
29	59	45	45	34		45	64		80	84	82	72
30	55		49	35		46	65	80	81	81	80	71
31	54		47	33		49				82		
ver- age	66	48	39	40	41	51	61	72	75	86	80	73

JAMES RIVER BASIN

JAMES RIVER BASIN--Continued

JAMES RIVER AT SCOTTSVILLE, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 October December November Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Day Mean Mean dis-Tons dis-Tons dis-Толя concenconcenconcencharge charge charge per per tration tration tration (cfs) (cfs) (cfs) day day day (ppm) (ppm) (ppm) 1..... 173 582 3 5 2,210 15 90 4,260 15 2. 2, 290 2, 860 2, 780 575 2 3 12 74 4,630 13 163 3. 575 4,440 132 23 178 11 4. 25 10 105 188 5. 562 2 3 2,370 3,540 86 77 6. 759 3 a 89 6 1,760 9 43 3,280 10 7. 642 7 2, 140 64 3,810 12 123 8. 605 7 1,910 41 4,080 12 132 9. 3,900 542 3 4 2,140 7 40 12 126 10..... 542 3 1.690 4,540 294 7 32 24 3 23 361 516 1.760 10 5,810 12. 504 2 3 1,840 6,640 19 341 40 13. 510 2 3 1,760 11 52 5,610 15 227 14. 516 3 4 1.760 9 43 8.890 136 a 3 260 15. 920 93 231 9.350 1.400 8 2 980 30 118 1,760 1,060 16. 31,600 1.294 111,000 7 33 9,110 43 39,600 13,400 752 80,400 12,000 1,480 1,840 9,110 8,400 7,940 21 577 17. 9 36 18. 332 15 a 340 10 50 7,280 3,750 2,860 343 19. 191 73 564 16 20. 5,010 124 1,680 8,690 286 8,400 318 6,710 3,720 21.... 91 a 914 24, 300 290 19,000 9.110 15 369 27, 200 16, 700 10, 400 7,720 22. 2,860 250 36 278 20,100 274 12 23. 2,530 26 178 130 5,860 6,220 13 218 24. 2,290 2,140 15 1,600 190 25. 11 64 8,170 27 596 5,010 12 162 6, 430 5, 210 4, 720 26..... 11 55 330 4.540 7 86 19 27. 1,760 79 13 183 4,170 7 28. 1,690 11 50 11 140 3,900 6 63 1,760 29. 11 52 4, 440 10 120 4,820 47 61 2,060 2,290 11,900 30. 4.630 12,800 35,500 19 106 12 a 150 345 31. 29, 400 31 192 307 Total. 130.742 211,140 159, 500 56, 512 218,840 53, 948 January February March 1. 27.600 132 9,840 2,060 15 a 83 17,800 122 5,860 2, 450 2, 450 2, 530 2, 610 15,300 11,200 23,900 25,500 17,400 113 4,670 1,570 13,600 16,000 2. 20 a132 211 3. 52 22 232 150 9,110 31 6,770 9,830 4. 763 13 92 144 5. 7,940 23 493 2,690 15,700 232 19 138 7,500 20 405 3,900 47 495 31,400 464 39,300 6. 19,300 36,400 26,400 15,700 7. 7,060 15 286 488 25,400 65,600 911 161,000 233 8. 6.640 13 433 42,600 57,000 530 81,600 5,010 4,630 9. 13 2 176 258 18,400 27,600 237 17,700 12 18,500 5,640 10. a 150 103 4,370 113 4,630 11,200 11 a 138 14,000 2,530 11. 48 1.450 67 9,600 8,**63**0 7,940 4,440 12,100 1,570 12. 108 34 881 48 4,080 a 99 25 583 10,900 37 1,090 13. 3,990 10,100 982 21 450 36 14. 15. 3,540 5 48 7,200 19 369 9,110 27 664 3,460 16. R 56 6,800 275 252 8,630 29 676 15 3,370 3,030 6, 220 5, 610 4, 720 45 9,600 14,300 17. 15 36 933 33 15 227 58 2, 240 18. 3,370 3,280 19. 5 45 204 14,000 48 1,810 20. 4 35 5,010 14 a 189 15,700 57 2,420 2,940 6 48 4,440 10 13,300 1,470 21. 120 41 22. 2,860 108 4, 350 10 a 117 13,600 82 3,010 2,860 5 39 5, 210 211 21,900 145 8, 570 23. 24..... 2,780 2,780 6 45 6,640 41 735 29,300 188 14,900 25. 6 45 8,630 43 1.000 18,100 157 7,670 2,690 в 2,720 26. 44 9,350 34 858 14,000 72 2,780 a 53 11,800 8,400 25 567 31 a 988 27. 28. 2,450 2,210 7 46 8,870 29 a 695 10,400 21 590 29. R 48 8,870 19 455 2,610 30.... 15 14 340 300 7 49 --__ 8,400 1,980 31. 13 69 7.940 576,450 413, 228 19,862 242,860 101,043 Total. 168, 120 __ ----

a Computed from estimated concentration graph.

JAMES RIVER BASIN -- Continued

JAMES RIVER AT SCOTTSVILLE, VA . -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued April Mav June Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Day Mean disdis-Tons dia-Tons concen concenconcencharge per day charge charge per tration tration tration (cfs) (cfs) (cfs) day day (ppm) (ppm) (ppm) 341 1. 6,640 4,260 23 265 2,700 25 182 2. 6,640 15 269 3,990 19 205 2, 100 25 a 142 3. 5,810 15 a 235 3,630 157 1,670 117 5,610 5,210 4. 15 227 3,720 20 201 1,660 11 49 5. 13 183 3.460 22 206 1,810 7 34 6, 4,540 4,540 1, 490 15 a 184 3,460 18 168 32 7. 15 a 184 3,370 16 146 1,640 6 27 4,440 156 79 8. 3,030 10 82 1,950 15 9. 4,080 10 110 2,860 69 3,370 60 546 10. 3,810 8 2,780 68 3,030 11.... 3.540 21 4,090 11,200 2,600 201 2,780 9 68 235 5,810 2,620 2,780 3,200 12. 57 894 10 71 486 14,700 7,280 7,760 13. 72 1,420 98 6.850 214 3.960 13 14. 149 a 3, 120 16 138 6,640 107 1,920 15. 17,800 274 13,200 3,200 20 4,820 62 807 20,000 168 3, 200 156 16..... 9,070 18 3,720 39 392 15,300 12,100 90 3,720 3,370 3,120 2,550 17. 20 a 162 29 244 18..... 60 22 226 131 19 19. 10,400 44 1,240 3,370 2,620 127 20. 8,870 34 814 3,030 11 90 2,320 11 69 8,170 41 904 2,480 11 74 2,320 14 88 7,400 6,900 22. 49 979 2,780 2,020 90 71 23. 36 671 3,030 10 82 2,020 8 44 6,430 6,220 31 538 1,950 24. 20 168 521 3,200 16 10 53 25. 138 1.950 38 6,220 638 3,120 10 84 2,020 49 5,010 27. 41 555 2,700 9 5 66 34 2,100 11 62 506 5,210 2,550 28. 1,710 37 29. 4,820 24 312 2,250 a 36 32 4,540 21 257 27 30. 1,670 6 3,200 38 a 328 221,100 43, 491 Total 4,474 27,011 ___ 98,890 88, 820 July August Sentember 1..... 5 19 1.400 2,400 58 34 9 2. 1,360 1,400 6 23 1,950 353 11 67 3. 1,370 1,270 17 2,550 12 83 1,110 4..... 1.180 10 9 4,350 540 5. 1.230 2 7 992 4 11 3,200 40 346 1,250 2 7 1,090 26 3,030 18 a 147 9 1,440 2 1,030 10 2,620 7. 85 1,620 1,630 1,810 1,180 1,100 2,780 2,400 5 22 22 10 75 8. 27 9. 119 R 18 7 45 6 1.880 10. 29 2,610 47 331 7 36 2,480 42 281 2,180 277 11 47 2,100 62 11. 2,480 2,700 2,620 1,740 58 388 1,950 3,810 163 1,670 27 12. 104 13. 758 82 844 1,450 3 12 35 14. 248 4.170 175 1.970 1,600 17 11 4 15. 52 6,010 233 3.780 1,670 18 1,750 9 4,170 1,090 1,550 21 17. 1,350 ĸ 22 6,080 240 s6,610 1,490 5 20 1,300 1,310 51,800 28,800 18. 14 720 101,000 1,580 17 1,400 11 318 24,700 15 19. 1,160 3 9 16,400 196 8,680 1,180 3 10 20. 840 7 9,850 115 3,060 1,340 4 14 21..... 830 7,060 1,070 1,280 5 17 22. 1,000 1,190 13 31 5,210 48 675 23. 1,270 1,020 5 17 9 25 4,350 29 341 24. 1,330 14 3,540 153 1,180 R 25 16 121 1,130 12 1,230 10 33 3,200 26. 1,180 6 2,780 2,320 12 90 1,230 13 27. 1,440 1,310 23 50 6 1,150 5 16 8 28. 38 5 18 1,180 2,320 2,250 29. 5 18 ß 1,240 5 17 30. 1,180 7 22 8 1,280 28 1,740 33 31. . . . 55,610 2, 145 155, 313 45,290 2,347 183, 172 2, 189, 394

Total discharge for year (cfs-days)

Total load for year (tons) s Computed by subdividing day.

a Computed from estimated concentration graph,

JAMES RIVER BASIN--Continued

JAMES RIVER AT SCOTTSVILLE, VA. --Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube: D. decentation: P. pipette: S. severy N. in native water; U. in disting the properties of t

	 ;	Methods of analysis		BN	BN	BWMC	BWMC	BN	BWMC	BWMC	No.
			1.000	:	66	66	100	:	:	901	3
			0.500 1.000	100	77	86	66	:	:	88	3
			0.350								
		Percent finer than indicated size, in millimeters	0.250	66	99	96	96	;	:	97	10
		ize, in m	0.125	93	99	06	92	100	:	88	3
rsed)		ndicated s	0.062	61	64	98	98	86	100	86	5
ally dispe	ediment	ner than i	0,008 0.016 0.031 0.062 0.125	2.1	58	92	73	10	92	69	3
mechanic	Suspended sediment	Percent fi	0.016	13	37	63	28	39	82	52	3
rsed; M,	ng		0.008	-	19	48	42	18	67	38	3
ally disper			0.004	4	==	33	27	12	30	24	:
, chemic			0.002								7
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	3,240	1,330	1,880	3,730	913	360	2,220	6,100
W, in di		ou	of sample (ppm)	1,080	400	222	1,100	391	129	685	400
	Water	tem-	ature (°F)		_						
		Discharge (cfs)	,	45,700	38, 500	38,600	68,000	9,580	4,280	62,900	02, 900
		Time		11:50 а. ш.	1:00 p.m.	12:16 p. m.	11:00 a.m.	;	6:22 p. m.	1:14 p. m.	1:17 p. m.
		Date of collection		Oct. 16, 1954 11:50 a. m.	Dec. 31	Feb. 8, 1955	Mar. 7	June 11	Aug. 13	Aug. 18 1:14 p. m.	

JAMES RIVER BASIN--Continued

JAMES RIVER AT RICHMOND,

LOCATION. --At filtration plant of Richmond Waterworks half a mile west of city limits of Richmond, Henrico County, and 2½ miles downstream from gaging station near Richmond

PRAINGE AREA.—6,757 square miles above gaging station.

RECORDS AVAILABLE.—Chemical analyses: October 1951 to September 1951, October 1955.

RECORDS AVAILABLE.—Chemical analyses: October 1951 to September 1955.

Water temperatures: October 1947 to September 1951, October 1952 to September 1955.

EXTREMES, 1954-55.—Hardness: Maximum, 110 ppm Oct. 1-10; minimum, 33 ppm Mar. 1-10.

Specific conductance: Maximum, 86 F July 5, 7-10, Aug. 7; minimum, 133 ppm Sept. 1, 36.3 micrombos Aug. 15.

EXTREMES, 1947-51, 1952-55.—Lissolved solids (1947-51). Maximum, 133 ppm Sept. 1-30, 1951; minimum, 58 ppm Apr. 1-10, Dec. 1-10, 1948.

Hardness: Maximum, 110 ppm Oct. 1-10, 1954; minimum, 133 ppm Mar. 1-10, 1955.

Specific conductance (1948-51, 1952-55): Maximum daily, 358 micrombos Oct. 2, 15, 1954; minimum daily, 47.0 micrombos Aug. 17, 1949.

Specific conductance (1948-51, 1952-55): Maximum daily, 358 micrombos Oct. 2, 15, 1954; minimum daily, 47.0 micrombos Aug. 17, 1949.

Water temperatures: Maximum 89 F July, 8, minimum, 18 ppm Mar. 1-10, 1954.

Water temperatures: Maximum 61 from 17, 1949.

Water temperatures: Maximum 62 from 17, 1949.

REMARKS.—Records of specific conductance of daily samples available in district offfice at Raleigh, M. C. Records of discharge for gaging station near Richmond for water year October 1954 to September 1955 given in WSP 1383. No appreciable inflow between gaging station and sampling point.

Chemical analyses, in parts per million, water year October 1954 to September 1955

Color 3883838 2288282 224252 4.2.2.5 평 148 98.7 122 93.0 116 Specific conduct-(microance mhos at 330 279 154 186 225 131 143 125 116 103 131 28 80 84 89 89 89 carbon-400871 52 3 4 6 52 0 33 10 10 10 Ň Hardness as CaCO, Calcium. mag-nesium 44444 96 59 77 77 48 344448 Dissolved 180°C) solids 11111 (residue on evaporation 511111 Nitrate 111511 11111 11111 (NO) Fluoride (F) 511111 11::: 17:11 11111 1.0.4.5. Chloride 4.00 <u>ວ</u> Sulfate (SO₄) 972999 Bicar-bonate (HCO₃) 35 35 44 44 44 44 44 g:::::: 111211 1:::: 211111 Stum (K) Sodium (Na) 1111 1111 Mag-nestum Cal-Cfum (Ca) 123 22 23 34 15 15 16 19 20 20 7 4 4 1 9 1 8 1 8 1 0.00 .08 .39 .57 2322334 33 4 23 4 7 Fe) Silica (SiO₂) 111511 5::::: 111111 Mean discharge (cfs) 185 9,894 2,169 2,004 919 11,640 3,811 10,450 7,503 13,120 3,957 2,275 11,290 8,914 7,180 34,410 12,860 16,350 Apr. 1-10 Apr. 11-20 Apr. 21-30 May 1-10 May 11-20 Dec. 1-10.
Dec. 11-20
Dec. 21-31
Jan. 1-10, 1955
Jan. 11-20. May 21-31..... Oct. 21-31..... Jan. 21-31..... Mar. 1-10..... Oct. 11-20..... Date of collection Mar. 11-20 Nov. 11-20 11-20 Mar. 21-31

Feb. Feb. Feb.

													ı
													2.7
7.6	7.6	9.7	7.5	7.6	7.6		2.	7.3	7.7	7.4	7.5	7.6	!
139	147	151	174	145	194	;	219	99. 7	99.4	128	148	168	149
15	13	12	19	01	21		82	21	9	::	15	17	14
53	26	23	99	49	72		92	34	36	46	53	22	55
;	:	;	116	1	;		:	:	;	;	;	;	:
;	1	;	0.7	1	1		1	1.5	∞.	!	1	:	:
-;	1	;	0.1	;	1		;	ţ	;	;	1	:	;
6.6	5.2	3.4	9.9	9.0	8.6	,	2	4.4	3.2	3.8	5.4	7.5	5.5
11	20	23	31	22	36	:	40	16	13	24	27	21	21
47	25	20	20	47	62		28	59	37	43	47	46	20
;	;	;	1.8	;	;		;	;	;	:	:	;	:
;	!	;	9.5	1	;		1	:	;	;	;	1	:
3.2	3.2	2,5	3.7	2.7	4.7		4.5	2.6	2.8	3.3	3.8	3.1	3.0
						;							17
.21	8.	8	. 14	27	8	-	8	. 22	20	8.	8	. 15	0.24
:	;	;	8.5	;	;		;	;	;	;	;	12	1
1,612	5, 524	1, 763	1,045	3,194	808		789	30,860	8,084	2, 995	1,684	1,328	7,029
June 1-10, 1955	June 11-20	June 21-30	July 1-10	July 11-20	July 21-31	•	Aug. 1-10	Aug. 11-20	Aug. 21-31		Sept. 11-20	Sept. 21-30	Average

JAMES RIVER BASIN -- Continued

JAMES RIVER AT RICHMOND, VA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	53		45	-	46	54	64	-	84	82	75
2 3	77	53	41	45	37	48	52			84	81	77
3	77	49	41	45		46	52	64	68	82	81	77
4		48	41	45	36	55	52	63	72	84	81	77
5	73	50	41	46	36	55	52	64	75	86	83	77
6	73	50	41	46	36	57		66	72		84	77
7	70	48	37	43	41	54		66	72	86	86	
8	72	~~	37	46	43	50	55	68	72	86	84	75
9	70	50	38	46	43	46	54	68		86	82	75
10	70	48	37	43	43	48	57	68	` 75	86		77
11	68	46	36	43	36	54	57	68	75	84		77
12	70	46	37	41	34	54	57	68	75	81	81	77
13	68	48	37	41	34	54	61	70	70	78	75	75
14	70	48	37	41	39	52	61	70	72	78	77	75
15	72	61	37	43	39	52	61	68	72	79	77	77
16	66	63		43	37	52	61	68	72	79	77	72
17	65	63	37	41	41	55	61	68	72	79	75	73
18	64	51	37	39	43	54	59	68	73	79	75	73
19	66	52	37	39	41	54		72	73	8.1	75	75
20	59	54	37		43	54		68		8.	75	75
21	57	54	39	39		52	63	70	75	79	75	75
22	55	50	37	39	43	52	61	70	75	73		73
23	54	50	39	39	46	54	63	66	79	73		72
24	54 55	52	39	37	46		63	68	75	81	77	72
25	55	50	39	37	48	46	66	68	75	8:	75	72
26	55		37	37	45	. 48	64	72	75	83	81	72
27			43	37	46	52	63	81	75	83	84	72
28	55			39	46	48	64	82	79	77	81	70
29	56	46	43	39		48	l	81	79	83	75	70
30	55		46	37			63	82	75		75	70
31	52		41	36						8.5	75	
Aver-)	1	1)	}	}	1	}				
age	65	51	39	41	41	51	59	70	74	82	79	74

CHOWAN RIVER BASIN

MEHERRIN RIVER NEAR SEVERN, N. C.

LOCATION.—At bridge on State Highway 35, 14 miles above Tarrara Creek and 14 miles north of Severn, Northampton County. DARINAGE AREA.—1,120 square miles. RECORDS AVAILABLE.—Chemical analyses: October 1954 to September 1955. REMANKS.—No discharge records available for this station.

		Color	:	21	23	17	22	\$	82	23	10	55	4	09
			6.3	9.9	6.7	6.4	5.7	5.9	6.4	8.8	7.0	9.9	6.7	6.4
	Specific conduct-	ance (micro- mhos at 25°C)				_	91.0	9.82	103	82.0			_	_
	ess CO,	Non- carbon- ate	0	0	0	es	6	S.	0	0	0	0	0	0
	Hardness as CaCO,	Calcium, mag- nesium	46	34	21	19	16	15	19	20	18	24	18	15
	Dissolved solids	(residue on evap- oration at 180°C)	105	69	65	92	8	20	77	63	49	92	61	67
er 1955	į	(NO ₃)	0.3	٥.	₹.	9.	∞.	۲.	9.	1.1	89.	₹.	6.	4.
to Septemb	i	Fluoride N (F) (0.0	0.	٥.	0.	•	0.	0.	٥.	0.	0.	0.	0.
water year October 1954 to September 1955	:	Chloride (C1)	6.2	4.5	4.5	5.8	4.2	5.2	8.8	4.2	3.0	3.5	3.5	5.5
er year Oc	;	Sulfate (SO ₄)	5.2	9.7	9.0	17	20	13	15	2.9	7.3	19	6.5	5.2
nillion, wat	Bicar-	bonate (HCO ₃)	83	43	27	20	80	12	24	35	26	31	23	19
in parts per million,	Potas-	sium (K)	4.0	2.6	1.9	1.9	1.5	1.4	1.3	1.4	1.4	1.8	2.0	1.6
ılyses, in p	:	Sodium (Na)	14	9.9	9.9	8.8	7.8	5.8	=	5.4	5.4	12	4.1	4.9
Chemical analyses,	Мае-	nesium (Mg)	3 2	8.	2.2	1.8	1.2	1.0	1.4	1.7	1.0	1.7	1.5	1.2
Che	Cal-	cium (Ca)	13	9.0	4.6	9.4	4.4	4.4	2.5	5.2	5.6	8.9	5.2	4.2
		(Fe)	0.77	.33	8	.15	80.	.18	.17	.12	.10	.37	.12	.21
	i	(SiO ₂)	12	10	15	17	12	12	15	15	13	14	8.8	12
	Mean	discharge (cfs)												
		Date of collection	Oct. 16, 1954	Nov. 15	Dec. 16	Jan. 15, 1955	Feb. 17	Mar. 15	Apr. 15	May 16	June 15	July 26	Aug. 15	Sept. 20

CHOWAN RIVER BASIN -- Continued

CHOWAN RIVER AT WINTON, N. C.

LOCATION.—At drawbridge on U. S. Highway 15S, and State Highway 97, at Winton, Hertford County, and 2.7 miles downstream from Meherrin River.

RECORDS AVAILED.—Chemical analyses: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

RETERMENT OF September 1954.

RETERMENT OF SEPTEMBER 1954 to September 1955.

RETERMENT OF SEPTEMBER 1954 to September 1955.

RETERMENT OF SEPTEMBER 1954 to September 1955.

RETERMENT 1954 TO JULY 11-20 minimum, 17 ppm May 1-10.

Secrifics conductance: Maximum and ally, 240 micromhos Feb. 1, 2; minimum, 37 Feb. 13.

Water temperatures: Maximum and 17 plus 11-20 minimum, 37 Feb. 13.

Water temperatures of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. No discharge records available for this station.

nit i	IIC SL	OPE BA	SINS,	JAMES	RIVER TO SE	WANNAH KIVEP	
	Oxygen	Fil- tered	13 13	2 2 4 2	1138622	14 10 8.3 10	100
	Oxy	Unfil- tered	17	18 11 17	14 23 17 18	21 19 16 15 15	13 17 20 18 18
		Color	50 70	3888	08 100 110 100 100 100	90 35 30 45 55	50 45 55 75
		Hd.	7.2	မော်ဆဆ မော်ဆဆ	6.9	7.9 6.8 7.0 4.0	6.3
	Specific conduct-	(micro- mhos at 25°C)	88.4 86.1	95.3 92.1 98.0	113 134 208 196 176 205	221 112 102 106 86.6 89.8	98.7 101 74.1 75.8 81.4 90.8
	ess CO _s	Non- carbon- ate	00-	1100	00000	0 4 7 0 1 1 1 1 1 1 8 8 8	. 00 11 5 7
955	Hardness as CaCO ₃	Calcium, mag- ne sium	22 21	2002	2 2 2 2 2 2 2 2 4 4 2 4 2	22 23 24 19	20 22 17 20 24
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids (residue	on evap- oration at 180°C)	68 67 69	7333	82 96 150 135 139	146 92 94 73 73	78 80 74 77 77 77
1954 to	Nitrate	(NO ₃)	0.7	0 t- c: 80	0,1-0,440	94460	6. 1.0 1.0 8.
October	Fluo-	(F)	0.1		000000	884448	884000
ter year	Chlo-	(C1)		. 8. 8. 9. 5. 8. 6. 6.	12 22 18 23 23	21 9.0 11 8.0 7.0	8.8.4.7.7.4.0 0.0.7.7.4.0 0.0.7.7.4.0
illion, wa	Sulfate	(* 0s)	6.6	. %. %. %. 2. % 1.	9.1 10 14 16 15	23 19 18 15	114 13 6.6 8.0 6.2
rts per m	Bicar-	(HCO ₃)	25	26 26 26	34 40 56 54 51	51 22 16 16 14	16 20 20 20 22 29
es, in pa	Po- tas-	Sium (K)	1.7	2.5	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	23.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	11.11.11
al analys	Sodium	(Na)	8.7	9 0 11	13 33 27 31	33 111 110 9.0 6.6	တွင်းလုံလုံလုံထွဲ
Chemic	Mag- ne-	Sium (Mg)	1.8	1111	8 9 8 6 8 8	1,1,1,0	2,11.
	Cal-	(Ca)	ເລີເຕີ		0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	4.0480.00 4.0480.00	6.0 6.0 4.0 8.3 8.3
	Iron	(Fe)	0.37	3 2 8 4	82. 88. 24. 25.	. 09 . 08 . 03 . 04	34.113
	Silica	(8102)	2.4	- 23 G G	4,0 11,0 2,0 2,0 11,0 11,0 11,0 11,0 11,0	14 13 5.5 7.1 7.9 8.7	7.9 14 11 12 12
	Mean	discharge (cfs)					
		Date of collection	Oct. 1-10, 1954	Nov. 1-10 Nov. 11-20 Nov. 21-30	Dec. 1-10 Dec. 11-20 Dec. 21-31 Jan. 1-10, 1955 Jan. 21-31	Feb. 1-10. Feb. 11-19 Feb. 20-28 Mar. 11-20 Mar. 21-31	Apr. 1-10 Apr. 11-20 Apr. 21-30 May 1-10 May 11-20 May 21-31

222223	14.9.9 17.17	12
14 16 13 13	16 24 24 25	11
100 55 80 80 80 50	50 110 100	70
7.7.5 7.5 8.7.6 0.7.0	1.7.2	1
88.3 85.2 115 121 149 102	94. 1 100 64. 2 62. 9 73. 8	111
00000	00040	73
22 28 22 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25	22 20 18 18 20	22
79 71 85 90 112 83	79 85 74 82	88
8.1. 1.1. 1.1. 1.1. 1.3.	0.7.98.	0.7
0,001,41	44,000	0.1
7.0	0.0003	10
7.3 8.5 7.7 5.3	0, 5, 0, 4, 4, 5, 0, 4, 0, 0	11
29 36 52 33	32 31 17 22	30
2.2	1, 2, 2, 2, 9	2.0
7.5 7.5 12 15 21 20	10 111 3.9 4.0	13
2.5	11.2	1.6
0 0 0 4 8 8	6.57.59 6.57.59 1.23.59	6.2
86. 86. 11. 12. 12. 13. 14.	31. 1.08. 1.04.	0.25
12 9.5 11 11 10	11 9.7 9.7	8.7
June 1-10, 1955 June 11-20 June 21-30 July 1-10 July 11-20 July 21-31	Aug. 1-10 Aug. 11-20 Aug. 21-31 Sept. 1-10 Sept. 11-20	Average

CHOWAN RIVER BASIN--Continued

CHOWAN RIVER AT WINTON, N. C.--Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at 9 a, m.7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	60	53		40	51	53	64	76	81	84	74
2	76	59	53	(39	52	55	62	76		85	75
3	77	57	51	1	39	51	55	63	76	81	85	74
4	77	55	49		38	53	56	65	76	82	86	74
5	78	56	47		38	54	57	68	76	83	87	74
6	76	54	45		39	55	55	70	76	82	86	74
7	74	53	44		41	55	58	70	76	82	87	74
8	72	54	47		41	55	58	71	75	81	87	74
9	72	56	46		42	55	59	67	72	81	85	73
10	72	57	47		43	56	59	74	71	80	84	73
11	72	56	42	45	42	56	59	74	76	81	84	73
12	72	55	43	44	41	56	62	72	78	81	81	72
13	73	53	43	44	37	55	62	70	73	82	80	72
14	73	52	46	43	40	56	62	69	73	82	81	73
15	71	56	46	44	40	56	65	68	76	83	82	75
16	69	56	46	44	44	57	63	69	77	83	82	75
17	68	56	47	42	45	58	64	70	77	84	80	76
18	68	58	48	41	45	58	67	70	77	85	80	76
19	68	59	44	40	45	56	69	72	76	85	83	73
20	65	57	42	41	44	55	70	72	74	83	82	73
21	64	57	40	39	46	57	71	74	78	84	81	
22		55	40	40	47	58	72	73	76	84	81	
23	62	55	39	40	47	57	72	72	76	85	80	
24	62	55	40	39	47	56	72	73	76	85	79	
25	68	55	41	40	46	55	72	74	77	84	77	
26	64	54	39	40	46	55	69	74	74	85	78	
27	64	54	41	40	46	52	68	76	75	86	78	
28	63	55	42	39	47	52	67	77	78	85	78	
29	63	54	47	40	1	51	67	77	79	84	79	
30	60	52	46	39	l	51	86	75	80	84		
31	59	<u> </u>		39		51		75	==	84	76 75	
Aver-	60	56	45		40		60		70	83		
age	69	56	45		43	55	63	71	76	83	82	

CHOWAN RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN CHOWAN RIVER BASIN IN NORTH CAROLINA

H				Che	mical ana	lyses, in l	parts per n	nillion, wat	ter year Oc	Chemical analyses, in parts per million, water year October 1954 to September 1955	o Septemb	er 1955						
	Dis-	i		Cal-	Mag-	;	Potas-	Bicar-	;		:	;	Dissolved solids	Hard as Ca	Hardness as CaCO ₃	Specific conduct-		
	charge (cfs)	Silica (SiO ₂)	(Fe)	cium (Ca)	nestum (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride Finoride Nurate (C1) (F) (NO ₃)	Fiuoride (F)	Nitrate (NO _s)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Calcium, Non- mag-carbon- nesium ate	ance (micro- mhos at 25°C)	Hď	Color
1							AHOSKIE	HOSKIE CREEK AT AHOSKIE	T AHOSKI)	2 2								
Feb. 16, 1955	38.0	l		4.9	1.9			4	13	01		0.0	18	20	17	91.9	5.7	
Aug. 31	120	ន	1.1		۲.	3.6	1.5	6	2.2	5.0	0.0	3.	a 35	01	6	44.2	6.8	65
Ö	Sum of determined constituents.																	

ROANOKE RIVER BASIN

ROANOKE RIVER AT ALTAVISTA, VA.

ROANOKE RIVER AT ALTAVISTA, VA.

LOCATION. --At gaging station at bridge on U. S. Highway 29, a quarter of a mile south of Altavista, Campbell County, half a mile downstream from Sycamore Creek, 3½ miles upstream from Otter River, and at mile 286.5.

DRAINAGE AREA. --1,802 square miles.

RECORDS AVAILABLE. --Chemical analyses: October 1950 to September 1951.

Water temperatures: October 1950 to September 1951, February 1953 to September 1955.

Sediment records: February 1953 to September 1955.

EXTREMES, 1954-55. --Specific conductance: Maximum daily, 358 micromhos Oct. 6; minimum daily, 31, 2 micromhos Aug. 18.

Temperatures: Maximum, 80°F on several days in July and August; minimum, freezing point on several days in December, January and February.

Sediment concentrations: Maximum daily, 1,830 ppm Mar. 6; minimum daily, 7 ppm Nov. 14.

Sediment loads: Maximum daily, 141,000 tons Oct. 16, 1954; minimum daily, 6 tons Oct. 9.

EXTREMES, 1950-51, 1953-55. --Specific conductance: Maximum daily, 388 micromhos Aug. 19, 1954; minimum daily, 54.2 micromhos Aug. 18, 1955.

Water temperatures: Maximum, 86°F Aug. 10, 1951; minimum, freezing point on several days during winter months.

Sediment concentrations (1953-1955): Maximum daily, 1,830 ppm Mar. 6, 1955; minimum daily, 5 ppm Jan. 8, 9, 1954.

Sediment loads (1953-55): Maximum daily, 141,000 tons Oct. 16, 1954; minimum daily, 5 tons Sept. 1-4, 1953.

REMARKS. --Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955

Day	0.4	T										
	Oct.	Nov.	Dec.	Jan.	Feb.	Маг.	Apr.	May	June	July	Aug.	Sept
1	72	43	37	43	32	49	45	61	64	73	78	73
2	72	45	39	43	39	48	49	58	65	75	78	72
3	72	41	37	41	36	48	50	58		78	79	68
4	71	40	36	43	32	46	52	62		78	80	68
5	70	43	36	45	32	50	51	65	65	78	80	68
6	72	42	37	45	35	54	52	64	70	80	79	71
7	63	40		43	38	47	54	61	72	78	79	71
8	51	39	33	38	39	44	49	65	66	76	76	70
9	56	41	35	39	38	43	50	65	65	76	78	69
10	58	41	36	40	38	46		61	63	78	71	68
		1	1	1.0	"	10		01	•			"
11	60	37	35		42	50	56	61	65	76	73	71
12	62	41	34	36		52	55	67	64	70	74	71
13	64	42	36	38	32	54	59	66	64	71	71	68
14	65	41	39	33	32	54	58		63	71	71	63
15	67	42	41		34	53	57	59	63	74	71	64
16	58	46	40	35	35	53	57	62	64	77	74	67
17	54	48	40	34	40	49	58	65	66	78	75	68
18	51	52	41	34	40	50	58	62	69	80	71	70
19	52	54	39	33	38	47	59	63	71		71	70
20	48	56	38	33	38	45	63	64	68	79	73	68
21	48	52	33	32	40	47	64	68	71	78	75	68
22	48	47	32	33	45	52	64	70	72	78	76	68
23	48	45	32	33	47	49	64	74	72	80	77	68
24	49	45	35	34	46	47	63	71	71	78	74	67
25	50	43	33	33	42	48	62	68	71	77	71	67
26	50	40	32	34	40		58	68	70	80	71	65
27	55	38	35	37	43	42	58 56	69	69		70	60
28	55	38	40	32	47	40	55	73	69	80	73	64
29	54	40	45	32		40	56	75	69	79	75	63
30	51	39	48	32		40	60	73	71	76	75	67
31	46		45	32		44		69		76	76	
ver- age	58	43	37	37	39	48	56	66	68	77	75	68

ROANOKE RIVER BASIN

ROANOKE RIVER BASIN -- Continued

ROANOKE RIVER AT ALTAVISTA, VA . -- Continued

Suspended sediment, water year October 1954 to September 1955

		auspe	naea seaim	ent, water ye	ar October	1954 to Septe	inder 1955		
		October			Novembe	r		Decembe:	r
			d sediment		Suspende	d sediment			d sediment
_	Mean	Mean	· · · · · · · · · · · · · · · · · · ·	Mean	Mean		Mean	Mean	Τ
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)		day	(cfs)	(ppm)	day
	000	26	17		(ppm)		1 000		100
1	236		17	778	19	40	1,230	32	106
2	239 356	24	15	910	19	47	1,260	21	71
3		73	70	1,030	28	78	1, 160	20	63
4	500	93	126	1,030	21	58	1,060	15	43
5	376	60	61	940	17	43	820	14	31
			ł 1	Ī					
6	336	64	58	940	16	41	1,200	27	87
7	264	34	24	820	14	31	1,840	50	a 248
8	239	12	8	790	13	28	1,560	43	181
9	221	10	6	910	10	25	1,340	31	112
10	268	30	22	784	11	23	1, 560	41	173
			\	1		1	\ <i>.</i>		1
11	215	22	13	730	12	24	1,720	52	241
12	194	22	12	715	12	23	1,400	46	174
13	288	47	37	710	9	17	1,400	37	140
14	260	26	18	650	7	12	4,050	227	s 2, 670
15	9, 270	1,098	s 50, 300	610	9	15	4,860	225	2,950
	-	, i	1						i
16	41, 300	1, 187	s 141,000	760	9	18	3, 150	125	1,060
17	5, 220	599	8,440	736	13	26	2,340	75	474
18	2,430	187	1,230	880	27	64	2, 160	52	303
19	1, 560	73	307	1,400	257	971	2,430 •	68	446
20	1, 440	46	179	5, 130	807	11,200	2,080	62	348
	.,		,	1 -,		,	_,,		
21	1,090	32	94	11,900	1, 118	35,900	1,840	48	238
22	1,000	26	70	4, 950	385	5, 150	1,440	40	a 156
23	880	21	50	2,790	118	889	1,370	31	a 115
24	778	19	40	2,000	62	335	1,400	28	106
25	725	17	33	1,720	39	181	1,300	25	88
	""		l " l	1, 120			1,000	20	"
26	880	18	43	1,340	27	98	1,000	20	54
27	710	20	38	1,400	24	91	1,000	20	59
28	720	18	35	1,060	20	57	1,200	20	65
29	820	27	60	1,400	40	151	1,200	49	159
30	1, 090	40	118	1,720	52		3,330	256	2,300
21	820	28	62	1,120		241			3, 120
31							4,050	285	
Total.	74, 725		202, 586	51, 533		55, 877	57, 840		16, 381
	1	January			February		<u> </u>	March	
	2 222								
1	2,880	155	1,210	850	24	55	7,000	458	8, 660
2	2,340	71	449	970	19	50	7,840	666	14, 100
3	1, 960	46	243	970	17	45	5, 220	364	5, 130
4	1, 680	36	163	940	28	71	4,680	203	2, 570
5	1, 480	40	160	910	24	59	4, 860	428	5, 620
		۱							
6	1, 440	34	132	1,730	201	939	10,800	1,830	53, 400
7	1,340	27	98	10,300	813	22,600	9, 160	666	16, 500
8	1, 260	22	75	6,900	538	10,000	6,300	433	7, 370
9	1, 200	17	55	4,320	198	2,310	4, 590	173	2, 140
10	1, 120	15	45	3,240	107	936	3,780	112	1, 140
	1 100	٠.,	ايما	0 200			9 040	A#	040
11	1, 160	14	a 44	2,700	74	539	3,240	97	849 757
12	1, 260 1, 200	13 15	44	2,520	70	a 476	3, 150	89	
13	1,200		49	1,920	62	321	2,880	96	746
14	1,090 1,060	15 14	44	1,400	56	a 212	2,610	75	529
15	1 1,000	1.4	a 40	1,800	50	243	2,520	75	510
			44	1 400	39	177	9 000	100	851
16	1 000	10		1,680	39		3,060	103	2,330
16	1,030	16							
17	1,030	24	67	1, 560	31	131	4,770	181	
17 18	1,030 1,000	24 19	67 51	1, 560 1, 480	31	124	4,590	235	2, 910
17 18 19	1,030 1,000 1,030	24 19 19	67 51 53	1,560 1,480 1,370	31 30	124 111	4,590 4,950	235 163	2, 910 2, 180
17 18	1,030 1,000	24 19	67 51	1, 560 1, 480	31	124	4,590	235	2, 910
17 18 19 20	1,030 1,000 1,030 1,060	24 19 19 26	67 51 53 74	1,560 1,480 1,370 1,260	31 30 24	124 111 82	4,590 4,950 5,040	235 163 175	2, 910 2, 180 2, 380
17 18 19 20	1,030 1,000 1,030 1,060	24 19 19 26 25	67 51 53 74 a68	1, 560 1, 480 1, 370 1, 260	31 30 24 26	124 111 82 84	4, 590 4, 950 5, 040 4, 410	235 163 175	2, 910 2, 180 2, 380 1, 270
17 18 19 20 21	1,030 1,000 1,030 1,060 1,000 1,000	24 19 19 26 25 26	67 51 53 74 a 68 70	1, 560 1, 480 1, 370 1, 260 1, 200 1, 260	31 30 24 26 32	124 111 82 84 109	4,590 4,950 5,040 4,410 4,230	235 163 175 107 156	2, 910 2, 180 2, 380 1, 270 1, 780
17 18 19 20 21 22 23	1, 030 1, 000 1, 030 1, 060 1, 000 1, 000 1, 090	24 19 19 26 25 26 30	67 51 53 74 a 68 70 88	1, 560 1, 480 1, 370 1, 260 1, 200 1, 260 1, 680	31 30 24 26 32 58	124 111 82 84 109 263	4,590 4,950 5,040 4,410 4,230 5,600	235 163 175 107 156 219	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090	24 19 19 26 25 26 30 24	67 51 53 74 a 68 70 88 71	1, 560 1, 480 1, 370 1, 260 1, 260 1, 680 2, 430	31 30 24 26 32 58 110	124 111 82 84 109 263 722	4, 590 4, 950 5, 040 4, 410 4, 230 5, 600 4, 500	235 163 175 107 156 219 187	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270
17 18 19 20 21 22 23	1, 030 1, 000 1, 030 1, 060 1, 000 1, 000 1, 090	24 19 19 26 25 26 30	67 51 53 74 a 68 70 88	1, 560 1, 480 1, 370 1, 260 1, 200 1, 260 1, 680	31 30 24 26 32 58	124 111 82 84 109 263	4,590 4,950 5,040 4,410 4,230 5,600	235 163 175 107 156 219	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,090	24 19 19 26 25 26 30 24 18	67 51 53 74 a 68 70 88 71 a 50	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 1, 680 2, 430 2, 520	31 30 24 26 32 58 110 86	124 111 82 84 109 263 722 585	4, 590 4, 950 5, 040 4, 410 4, 230 5, 600 4, 500 3, 780	235 163 175 107 156 219 187 91	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030	24 19 19 26 25 26 30 24 18	67 51 53 74 a68 70 88 71 a50	1, 560 1, 480 1, 370 1, 260 1, 260 1, 680 2, 430 2, 520 2, 250	31 30 24 26 32 58 110 86	124 111 82 84 109 263 722 585	4, 590 4, 950 5, 040 4, 410 4, 230 5, 600 4, 500 3, 780	235 163 175 107 156 219 187 91	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030	24 19 19 26 25 26 20 24 18	67 51 53 74 a68 70 88 71 a50	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 1, 680 2, 430 2, 520 2, 250 2, 160	31 30 24 26 32 58 110 86	124 111 82 84 109 263 722 585	4, 590 4, 950 5, 040 4, 410 4, 230 5, 600 4, 500 3, 780 3, 420 3, 420	235 163 175 107 156 219 187 91 74	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683 729
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030 1,000 1,000 1,000	24 19 26 25 26 30 24 18 17 12	67 51 53 74 a 68 70 88 71 a 50 46 32 a 68	1, 560 1, 480 1, 370 1, 260 1, 260 1, 680 2, 430 2, 520 2, 250	31 30 24 26 32 58 110 86	124 111 82 84 109 263 722 585	4,590 4,950 5,040 4,410 4,230 5,600 4,500 3,780 3,420 2,970	235 163 175 107 156 219 187 91 74 79 60	2,910 2,180 2,380 1,780 1,780 3,310 2,270 929 683 729 481
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,030 1,000 1,000 1,000 940 910	24 19 19 26 25 26 30 24 18 17 12 12 21	67 51 53 74 a68 70 88 71 a50 46 32 a68 52	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 2, 430 2, 520 2, 250 2, 160 3, 510	31 30 24 26 32 58 110 86 59 122 179	124 111 82 84 109 263 722 585 358 712 1,700	4,590 4,950 5,040 4,410 4,230 5,600 4,500 3,780 3,420 3,420 2,970 2,700	235 163 175 107 156 219 187 91 74 79 60 56	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683 729 481 408
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030 1,000 1,000 1,000 1,000 1,000 1,000 1,000	24 19 26 25 26 30 24 18 17 12 15	67 51 53 74 a 68 70 88 71 a 50 46 32 a 68 52 a 39	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 1, 680 2, 430 2, 520 2, 250 2, 160	31 30 24 26 32 58 110 86	124 111 82 84 109 263 722 585	4,590 4,950 5,040 4,410 4,230 5,600 4,500 3,780 3,420 3,420 2,970 2,700	235 163 175 107 156 219 187 91 74 79 60 56	2, 910 2, 180 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683 729 481 408 381
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	24 19 19 26 25 26 30 24 18 17 12 12 21	67 51 53 74 a68 70 88 71 a50 46 32 a68 52	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 2, 430 2, 520 2, 250 2, 160 3, 510	31 30 24 26 32 58 110 86 59 122 179	124 111 82 84 109 263 722 585 358 712 1,700	4,590 4,950 5,040 4,410 4,230 5,600 4,500 3,780 3,420 2,970	235 163 175 107 156 219 187 91 74 79 60 56	2, 910 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683 729 481 408
17	1,030 1,000 1,030 1,060 1,000 1,000 1,090 1,090 1,030 1,000 1,000 1,000 1,000 1,000 1,000 1,000	24 19 26 25 26 30 24 18 17 12 15	67 51 53 74 a 68 70 88 71 a 50 46 32 a 68 52 a 39	1, 560 1, 480 1, 370 1, 260 1, 260 1, 260 2, 430 2, 520 2, 250 2, 160 3, 510	31 30 24 26 32 58 110 86 59 122 179	124 111 82 84 109 263 722 585 358 712 1,700	4,590 4,950 5,040 4,410 4,230 5,600 4,500 3,780 3,420 3,420 2,970 2,700	235 163 175 107 156 219 187 91 74 79 60 56	2, 910 2, 180 2, 180 2, 380 1, 270 1, 780 3, 310 2, 270 929 683 729 481 408 381

s Computed by subdividing day, a Computed from estimated concentration graph.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT ALTAVISTA, VA.--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued
April May

		April			May			June	
_	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons
	charge (cfs)	tration	per	charge (cfs)	tration	per	charge (cfs)	tration	per
		(ppm)	day	(CIS)	(ppm)	day	(CIS)	(ppm)	day
1	2,000	36	194	1, 720	41	190	1,440	337	1,310
2	1,900	43	221	1,600	39	168	1, 120	177	535
3 4	1,800 1,700	40 43	194 197	1,520 1,480	36 34	148 136	1,000 970	134 128	a 362 a 335
5	1,600	37	160	1, 370	28	104	940	91	231
		}	1	1		1	1		
6,	1,600	29	125	1,370	30	111	910	80	197
7 8	1,600 1,500	28 27	121 109	1,300 1,260	27 29	95 99	910 1, 920	75 974	184 5, 050
9	1,400	25	95	1,300	41	144	1,920	740	3,840
10	1,400	25	a 95	1, 160	37	116	1,340	337	1, 220
.,	1, 500	28	110		43	135	4 000	1, 304	- 25 100
12	2,000	246	113 1,330	1, 160 1, 160	46	144	4,800 7,100	1, 835	s 25, 100 35, 200
13	3, 150	187	1,590	1,340	54	195	3, 150	626	5,320
14	8, 410	444	10, 100	1,880	96	a 487	2, 160	241	1, 400
15	14, 100	1, 136	43, 200	1,640	86	381	1,700	166	762
16	7, 640	540	11, 400	1,400	67	253	1,600	112	484
17	4,500	227	2,760	1, 260	56	191	1,400	91	344
18	3,500	128	1,210	1,200	43	139	1,300	86	302
19 20	3,000	102	826	1, 120	45	136	1,200	75	243
20	2,500	91	614	1,090	44	129	1,200	75	243
21	2,200	70	416	1,030	46	128	1, 160	64	200
22	2, 100	70	397	1.090	64	188	1,090	64	188
23,	2,000	62	335	1,760	161	765	1,030	64	178
24	2,100	70	397	2,160	293	1,710	1,600	385	1,660
25	2,880	177	1,380	3, 510	1, 407	13,300	1,760	753	3,580
26	2,700	262	1,910	2,610	808	5,690	1,720	401	1,860
27]	2,300	102	633	1,720	428	1,990	1,260	396	1,350
28	2,080	68	382	1,370	193	714	1,030	251	698
29	1,960 1,840	57 49	302 243	1, 230 1, 340	144 193	478 698	940 880	158 118	401 280
30 31	1,040	49	243	1, 540	268	1,220	880	110	200
Total.	89, 160		81,049	46, 830		30,382	50, 550		93,057
===		Terler			August			Septembe	
-	000	July			August				
1 2	880 880	96 80	228 190	850 850	187 141	429 324	1,040 1,110	34 71	95 213
3	850	80	184	754	96	195	1,360	125	459
4	778	75	158	685	65	120	1,670	89	401
5	850	107	246	675	65	118	1, 500	67	271
6	778	64	134	630	43	73	1, 220	45	148
7	1,300	417	1, 460	790	135	288	1, 110	42	126
8	1,090	655	1.930	1.370	394	1,460	1,000	35	95
9	970	556	1,460 3,260	1,560 2,250	626 910	2, 640 5, 530	900	26	63 47
10	1, 990	606	3,260	2,250	910	5, 530	830	21	47
11	2,790	1,075	8, 100	1,340	439	1,590	830	26	58
12	9, 160	1, 749	43,300	i 1.120 i	257	777	830	22	49
13	4,680	888	11,200	1,200	193	625	830	24	54
14	2,340 1,720	441 214	2,790 994	1, 260 2, 080	337 706	1,150 3,960	736 712	24 24	48 46
10	1, 120	214	994	2,000	100	0,900	114	44	40
16	1,400	155	586	1,200	242	784	694	21	39
17	1,230	107	355	3,520	555	s 9, 620	670	21	38
18	1,090	81 81	238	27,900	1, 198	90, 200	640	22 24	38
19 20	1,030 970	64	225 168	10, 400 3, 510	1,017 332	28,600 3,150	628 610	28	41 46
	••	٧. ا	100	, í	002	0,100	010		
21	880	64	152	2,460	150	996	580	22	34
22	850	56	129	1,980	122	652	555	22	33
23	778 910	51 62	107 152	1, 700 1, 6 70	81 82	372 370	565 592	32 55	49 88
25	1,000	118 .	319	1,460	58	229	712	34	65
26	1,000	102	275	1,320	47	168	795	54	116
27 28	910 920	98 128	241 283	1, 220 1, 110	62 42	204 126	700 640	39 30	74 52
29	1,090	302	889	1, 110	42	120	616	27	45
30	910	257	631	970	34	89	586	27	43
31	790	177	378	970	34	89			
Total.	46, 714		80, 762	79, 884		155,050	25, 261		2, 974
Total di	ischarge for	r year (cfs-	days)		• • • • • • • • • • • • • • • • • • • •				. 767, 607
	oad for year	(tons)	<i></i>		· · · · · · · · · · · · ·	<i></i>			. 909,055

s Computed by subdividing day.
a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT ALTAVISTA, VA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. Dottom withdrawat tuber, D.) decandation; B. pipeter; S. siver M. in native water; A. analysis of analysis of about the second of the second

		Methods of analysis	,	BWMC	BN	BWMC	BN	BWMC	BWMC	BN	BWMC						
			1.000	96			100				86	100	1	;	86	87	96
			0. 500	98	100	91	94	92	85	9.4	94	66	100	;	92	83	85
			0.350			_			_						•	_	
:		limeters	0,250	75	86	86	19	91	85	81	88	86	66	100	88	74	82
200		ze, in mil	0.125	69	96	82	25	62	15	8.1	77	93	87	66	78	99	72
sed)		dicated si	0.062	99	91	76	42	54	89	98	73	91	95	86	92	62	69
lly disper	diment	er than in	0. 031	61	67	65	31	45	29	65	09	81	81	98	7.1	90	65
mechanically dispersed	Suspended sediment	Percent finer than indicated size, in millimeters	0.016	53	46	55	22	38	47	47	20	69	89	20	62	53	24
sed; M,	Sng	ď	0.008	41	32	42	15	31	36	38	37	22	23	25	48	48	46
illy disper			0.004	59	21	30	6	21	2.2	2.2	35	41	36	35	31	30	34
C, chemically dispersed;			0.002														
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	3,370	2,740	1,310	757	1,000	2,360	4, 110	4.930	5,820	5, 590	3,310	1,900	1, 700	1, 500
W, in di		Concentration	or sampre (ppm)	2,240	944	927	348	410	892	1, 470	1, 590	2, 280	2,040	2,820	1,320	1, 250	696
(menil)	Water	tem- per-	ature (°F)				_		_							_	
	Ĭ	charge (cfs)		33, 750	45, 740	14,650	4, 510	5,370	11, 928	10, 224	12,680	6,087	8, 489	2, 268	29, 924	30,868	30, 508
		Time		10:20 p.m.	1:56 p. m.	5:45 p.m.	2:44 p.m.	7:48 p.m.	4:21 p. m.	6:44 p.m.							7:30 p.m.
	í	Date of collection		Oct. 15, 1954	Oct. 16	Nov. 21	Dec. 14	Dec. 14	Feb. 7, 1955	Mar. 6	Apr. 15	June 12	June 12	July 11	Aug. 18	Aug. 18	Aug. 18

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH,

And at mile 227.3

Band at mile 27.3

Ba

to September 1955 given in WSP 1383

Chemical analyses, in parts per million, water year October 1954 to September 1955

Color 40 115 120 65 22228 488848 88.65.45 핂 228 162 144 143 143 95.2 mhos at 25°C) (micro-carbon-Non-Hardness as CaCO, Calcium, nestum mag-040 088 889 449 549 48 48 34 48 34 34 Dissolved at 180°C) solids (residue on evaporation 일 : : : : : 1 1 22 1 1 11111 Nitrate (NO.) 111011 11111 11111 Fluoride æ 11111 111711 111111 Chlor ide (C1) Sulfate (SO₄) 22222 2022 2022 2022 2022 2022 Bicar-bonate (HCO₃) 532444 22222 45 45 38 51 55 Sturn (K) Potasŀ 1 : 1.1 ; 1 1 1 1 : : Sodium (Na) 1111 1 1 1 : : 11111 Mag-nesium (Mg) 4.0 8.0 0 8 7 5 8 0 8 7 8 8 Ctum (Ca) 1126,48 22222 222222 80122 828828 82828 Fe) Silica (SiO₂) 11111 1 ; ; 11111 13 Mean discharge (cfs) 446 7, 408 1, 519 1, 390 1, 470 5, 139 2, 193 2, 472 2, 472 2, 726 1, 792 1, 675 2, 393 3, 398 9, 275 5, 009 21-31..... 11-20..... 1-10 : 21-31..... : Date of collection 1955 21-31 11-20 21-30 21-31 Dec. 1-10.. Dec. 11-20 Dec. 21-31. Jan. 1-10, Jan. 11-20. Jan. 21-31. 1-10, 11-20. 21 - 2811-20 1-10 1-10 Nov. Feb. Feb. Mar. Mar. ; ; ; ;

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4. 6.	(((%) (111186	:
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2,483 7,511 3,794 2,082 2,158 2,981	2,039 3,559 1,719 1,342 3,251 1,135		3, 203
Apr. 1-10, 1955 Apr. 11-20 Apr. 21-50 May 11-20 May 11-20 May 21-31	June 1-10 June 11-20 June 21-30 July 21-20 July 11-20 July 11-20 July 21-31	Aug. 1-10 Aug. 21-20 Sept. 1-10 Sept. 21-30	Average

ROANOKE RIVER BASIN -- Continued

ROANOKE RIVER AT RANDOLPH, VA . -- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement between 6 a.m. and 8 a.m./

				ice-uarry	measurer	Hell Detw	een o a. n	u. autu o a	· III./			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar,	Apr.	May	June	July	Aug.	Sept.
1	74	48	39	46	34	48	46	63	69	75	80	76
2	75	49	39	45	37	49	50	61	69	76	80	75
3	75	45	38	43	36	49	52	63	69	78	81	72
4	74	42	37	.3	35	49	53	64	68	80	82	69
5	74	44	38	44	33	51	54	64 66	69	80	82	69
6	75	44	36	45	36	55	54	68	71	80	82	71
7	67	43	34	43	38	52	54	66	74	79	83	72
8	58	42	33	42	38	48	54	67	70	80	81	72 72
9	58	42	35	42	39	47	53	66	69	80	78	72
10	62	43	35	42	40	48	56	66	67	78	78 76	71
11	65	43	35	39	43	50	58	68	67	78	74	72
12	66	43	35	37	36	52	58	69	67	76	74	72
13	66	45	36	37	34	52 55 56	61	69	66	72	72	71
14	70	44	36	35	33	56	59	65	66	72	72	67
15	69	44	38	37	35	55	58	62	66	73	71	
16	61	46	39	37	36	55	58	63 65	66	78	72	68
17	58	49	i	35	40	55 52	60	65	68	80	72 75	71
18	57	51		36	41	52	62	65	70	81	72	72
19	55	54	42	35	41	50	61	66	70	82	72	71
20	52	56	39	35	41	48	63	67	70	81	74	71
21	52		36	34	42	49	65	69 73	72	81	76	71
22	51	52	33	35	45	52	65	73	70	82	77	71
23	52	49	33	36	47	51	66	71	74	82	77	70
24	52	46	34	37	48	51	67	70	75	82	76	70
25	52	45	34	36	45	53	65	71	75	82	75	69
26	53	43	34	35	44	49	62	71	75	82	73	66
27	56	41	36	37	45	43	61	72	72	81	73	65
28	54	41	36	34	46	44	58	73	72	82	75	66
29	56	41	43	34		43	59	75	72	82	76	68
30	55	41		34		43	61	75	74	80	76	70
31	51		45	32		45	_==_	75		78	77	1
Aver-		4.5										1
age	61	45	37	38	40	50	58	68	70	79	76	70

ROANOKE RIVER BASIN

ROANOKE RIVER BASIN -- Continued

ROANOKE RIVER AT RANDOLPH, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 October Suspended sediment December Suspended sediment November Suspended sediment Mean Mean Mean Mean Mean Day Mean disdis-Tons dis-Tons concenconcenconcencharge charge charge per per per tration tration tration (cfs) (cfs) day day (cfs) day (ppm) (ppm) (ppm) 1.... 1, 400 1, 190 1, 330 435 430 42 37 36 45 26 170 2,800 2,260 51 41 386 250 32 2. 84 119 3. 390 29 31 33 2, 100 1, 900 147 26 4. 420 34 1,620 136 25 128 31 540 48 70 1,580 29 124 1,740 17 595 6. 53 85 1,500 27 a 109 1.700 18 83 7. 2,020 2,620 2,350 505 31 42 1, 470 1, 360 21 83 26 142 8. 415 16 18 16 a 59 41 290 9. 370 18 18 1, 190 14 45 241 10. 360 17 17 1, 260 26 88 2,440 37 244 355 18 17 1, 220 53 175 2,800 44 333 12..... 400 26 28 1, 160 13 2,710 2,350 41 48 351 1, 120 1, 080 13. 338 25 23 14 42 39 247 14. 318 20 17 18 52 4, 420 151 1, 800 15. 625 213 359 1,080 11 32 7,200 202 3,930 16. 17,600 1, 434 68, 100 990 12 32 6,080 226 3,710 17. 35, 700 12, 600 640 61,700 1,050 54 4, 460 3, 600 1, 230 19 102 18. 330 11, 200 1, 190 18 58 78 758 3,700 19. 2,620 1,470 4,340 262 64 254 3,700 107 1.070 20. 2,440 126 830 291 3, 410 3,800 43 441 21. 2, 180 79 465 10, 500 805 22,800 3,200 320 22. 1,900 1,700 1,500 2,710 2,180 2,180 14, 800 5, 740 59 303 621 24, 800 41 300 23. 4,660 40 184 301 21 124 24. 4, 280 36 146 141 1,630 744 23 135 25. 1,440 34 132 3, 400 124 81 2.180 21 26. 1, 190 2,900 2,350 27 87 52 407 1,980 37 198 27. 1,260 1,260 1,780 1,740 27 92 35 222 47 226 28. 40 136 2, 260 32 195 19 89 29. 1, 220 208 88 63 2, 260 59 360 1,820 2,180 18 30. 1,400 106 a 401 70 412 31. 1,660 128 574 5, 240 470 Total . 95, 246 148, 021 79, 990 61,611 90, 240 21, 347 January February March L 4, 910 202 2,680 1, 440 62 6,640 194 3, 480 16 3,900 3,200 1,470 1,500 9,430 8,160 2. 139 1,460 18 71 427 10,900 3. 78 674 563 12, 400 15 61 4. 2,710 1, 540 301 5, 340 14 6.570 5. 2,440 34 224 1, 440 14 4, 520 6,920 242 2, 260 15, 400 16, 600 10, 100 7, 130 49, 400 47, 200 13, 000 6. 30 183 53 1.860 266 1 199 7. 2, 100 2, 020 25 9, 900 12, 100 7, 360 13,000 142 485 1 052 16,800 8. 19 104 475 514 9. 1,900 19 315 6,260 398 7,660 5, 800 10. 1,820 22 108 5, 320 179 2, 570 204 3, 190 11. 1,820 17 84 4,460 102 1, 230 5,000 157 2, 120 1, 340 12. 1,900 4, 640 4, 550 16 82 4, 190 55 622 107 1,980 13. 19 102 3,500 42 397 109 1,340 14. 1,900 1, 140 14 72 2,710 45 329 4,370 97 15. 1 780 14 67 2,530 43 294 4, 100 108 1,200 16. 1,700 16 73 2,620 39 276 4.190 92 1,040 1,740 1,740 1,700 a 1, 590 2, 910 2, 980 17. 32 150 2,530 40 273 5,000 118 18. 31 146 2,350 33 209 6,080 5,940 177 15 19. 69 2, 180 2, 100 29 171 186 1,660 63 6, 220 153 2, 570 142 1 700 16 21. 73 1.980 28 150 5, 940 160 2. 570 1, 660 1, 740 1, 860 1,900 2,260 4,000 2, 460 2, 040 3, 190 108 190 256 22. 24 37 5, 800 157 23. 29 136 42 6,010 126 24. 110 84 907 6, 430 5, 400 184 25. 1,860 20 100 4, 280 113 1.310 162 2,360 26. 1,780 16 77 4,000 23 896 4.730 116 1.480 1,700 27. 14 3,600 5,160 700 64 72 4, 550 89 1.090 28. 1,660 8 36 131 1,830 4, 280 75 867 1, 580 29. 12 51 3, 800 687 --3,500 30. 1,440 16 69 48 454 1, 440 31. 16 62 300 39 347 Total . 63,600 7,803 100, 280 49,384 196, 580 192, 865

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN -- Continued

ROANOKE RIVER AT RANDOLPH, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		<u>Şuspended s</u>	sediment, w	<u>ater year Oc</u>	<u>tober 1954 to</u>	o September	1955 Conti	nued	
		April			May			June	
		Suspende	d sediment		Suspende	d sediment		Suspended	sediment
	Mean	Mean	r	Mean	Mean		Mean	Mean	
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	3,000	51	413	2,680	54	382	2, 180	330	a 1, 940
2	2,900	80	626	2,440	47	310	1,740	252	1, 180
3	2,710	62	454	2,260	47	287	1,540	203	844
4	2,620	45	318	2, 180	50	294	1,440	171	665
5,	2,440	39	257	2, 100	48	272	1,360	120	441
_									
6	2,350	36	228	1,940	41	215	1,330	95	341
7	2,350	40	254	1,900	43	221	1,400	126	476
8	2, 260	48	293	1, 820	47	231	2,800	534	4, 040
9	2,180	34	200	1,780	35	168	3,700	781	7, 800
10	2,020	56	305	1,780	33	159	2, 900	791	6, 190
	l								
11	2,020	47	a 256	1,660	37	166	2,350	669	4, 240
12	2, 260	47	287	1, 780	44	211	11,300	1,415	43,200
13	4, 280	238	s 2, 980	1,940	66	346	6,030	907	14,800
14	8, 140	479	10,500	3,400	209	1,920	3,900	645	6,790
15	21, 100	794	45, 200	3, 200	119	1,030	2,710	272	1, 990
	1],]					1 1	,
16	15, 500	669	28,000	2,440	71	468	2,260	180	1, 100
17	6, 980	456	8,590	2,020	53	289	1,980	136	727
18	5, 640	330	5,030	1,820	47	231	1,820	100	491
19	4,820	170	2,210	1,700	42	193	1,660	92	412
20	4, 370	121	1,430	1,620	32	140	1,580	85	363
	'	l	-,	-,			1 -,	••	
21	3,900	112	1, 180	1, 540	30	125	1,580	75	320
22	3,700	92	919	1, 540	39	162	1,540	69	287
23	3,500	80	756	2, 620	430	3,040	1,440	61	237
24	3,400	78	716	4,370	922	10,900	1,470	78	310
25	5, 240	276	3,900	5, 870	771	12,200	1, 980	168	898
	","		0,000	0,0.0		12,200	1,500	100	000
26	5,000	262	3, 540	4,730	490	6, 260	2,440	242	1,590
27	4,000	191	2,060	3,300	587	5, 230	2, 260	340	2,070
28	3,400	134	1, 230	2, 260	373	2,280	1,780	223	1, 070
29	3,000	82	664	1, 940	230	1,200	1,400	190	718
30	2,800	61	461	1,820	153	752	1,300	146	512
31	2,000	".	401	2, 800	316	2,390	1,000	140	
Total.	107 000		100 057		010		70 170		100.040
Total.	137, 880		123, 257	75, 190		52,072	73, 170		106, 042
		July			August			September	
	1 200			4 400			1 200		
1	1,300	110	386	1,080	97	283	1, 820	39	192
2	1,300	92	323	1,020	98	270	1,860	49	246
3	1,300	83	291	1,050	84	238	2,980	137	a 1, 100
4 5	1,300	65	228	960	73	189	4,000	181	1, 950
5	1,220	47	155	900	74	180	2,900	120	940
	1,900	63	202	010	70	159	9 440	97	639
6	1,330		496	810	72	157	2,440	89	485
7	1,330	138		810	55	120	2, 020		
8	1,500	178 169	721 739	1,720	601 447	2,790	1,860	52 56	261 257
9	1,620			1,740		2,100	1,700		
10	1,360	213	782	2,320	704	4,410	1, 580	42	179
	9 000	070		0.710	اممما	4 050	1 500	ا مما	051
11	2,620	378	2,670	2,710	636	4,650	1,500	62	251
12	6, 900	1, 332	s 29, 500	1,980	475	2,540	1,500	37	150
13	7,640	1,717	35, 400	1,940	393	2,060	1,360	29	106
14	4, 820	985	12,800	2,980	822	s7,860	1,300	42	147
15	2, 710	466	3, 410	6, 920	1, 529	28,600	1, 260	30	102
		l	ا ا			<u>-</u>			
16	2,020	264	1,440	4, 100	485	5,370	1,260	30	102
17	1,700	163	748	3,900	437	4,600	1, 260	29	99
18	1, 470	122	484	25, 100	694	47,000	1,260	23	78
19	1,330	104	373	36, 700	454	45,000 12,000	1, 260	24	82
20	1, 300	91	319	19, 200	232	12,000	1, 280	29	99
		l .							
21	1, 160	95	298	6, 500	210	3,690	1,220	30	99
22	1, 120	119	360	3, 800	188	1,930	1,160	21	66
23	1,050	66	187	3,700	186	1,860	1, 120	25	76
24	990	60	160	2, 900	118	924	1, 120	28	85
25	1,050	59	167	2,900	98	767	1, 120	22	67
		[i l	_		!			
26	1, 120	67	203	2,530	77	526	1, 190	28	90
27	1, 190	66	212	2, 440	61	a 402	1,260	35	119
	1,080	60	175	2,020	53	289	1,260	30	102
28		56	154	1, 820	54	265	1, 190	19	61
28 29	1,020						1 100		44
29	1,440	107	416	1,820	45	221	1, 160	14	77
28 29 30 31	1,020 1,440 1,260			1,820 1,820	45 44	221 216	1, 160		
29 30 31	1, 440 1, 260	107	416 497	1, 820		216			
29 30 31 Total.	1, 440 1, 260 56, 410	107 146	416 497 94, 296	1,820 150, 190			48, 180		8, 274
29 30 31 Total	1, 440 1, 260 56, 410 lischarge fo	107 148 r year (cfs-	416 497 94, 296 days)	1, 820		216 181, 507	48, 180		

s Computed by subdividing day.
a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH, VA.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decantation; P. pipetter, S. sieve; N, in native water;

		Methods of analysis		BWMC	BN	BWMC	BWMC	BN	BWMC	BN	BWMC	BN	BWMC	BN
			1.000	:	801	100	86	001	001	100		100	:	:
			0. 500	100	86	86	88	97	86	86	100	66	001	100
			0.350						-					
		llimeters	0,250	96	87	85	84	94	96	95	66	96	66	94
		iize, in m	0.125	85	64	82	76	28	68	88	6	95	91	29
rsed)		Percent finer than indicated size, in millimeters	0.062	88	90	8	69	77	82	84	93	87	83	75
mechanically dispersed)	sediment	iner than i	0. 031	20	22	73	28	26	7.1	9	82	22	15	22
mechanic	Suspended sediment	Percent fi	0.016	28	46	91	47	38	20	45	88	41	9	2
rsed, M,	Σ		0.008	41	34	48	38	21	88	32	55	32	4.1	23
ally dispe			0.004	30	23	34	29	13	44	22	37	18	35	8
C, chemic			0.002											
W, in distilled water; C, chemically dispersed; M,		Concentration of suspension	analyzed (ppm)	4, 230	1, 710	1, 600	753	1,370	1,350	3,500	4,000	6, 630	1,840	1,340
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration	of sample (ppm)	1,980	909	536	273	691	916	1, 190	2, 120	2, 250	754	479
NI COMP	Water	tem-	ature (°F)					_						
		Dis- charge	(cis)					14,300	18, 500	21, 200	10, 100	10, 100	20,800	37,000
		Time		6:38 a. m.		2:20 p. m.		12:18 a. m.	12:34 a. m.	2:48 p.m.		7:16 a. m.	7:54 a.m.	10:47 a.m.
	i	Date of collection		Oct. 16, 1954	Oct. 17	Nov. 22	Dec. 15	Feb. 8, 1955	Mar. 7	Apr. 15	June 12	June 12	Aug. 18	Aug. 19

ROANOKE RIVER BASIN--Continued

LOCATION.--At water plant intake of Leaksville, Rockingham County, half a mile upstream from bridge on State Highway 87, and 1.3 miles upstream from Smith River. DRAINAGE AREA.--1,056 square miles (at gaging station near Wentworth, N. C.).
RECORDS AVAILABLE.--Chemical analyses: November 1944 to October 1954 to September 1955.
REMARKS.--Records of discharge for gaging station near Wentworth, N. C. for water year October 1955 to September 1955 given in WSP 1383. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff. DAN RIVER AT LEAKSVILLE, N.

Chemical analyses, in parts per million, water year October 1954 to September 1955

	Mean			-[6]	Mag-		Dotas.	Biror					Dissolved	Hardness as CaCO ₃	ness CO _s	Specific conduct-		
Date of collection	discharge (cfs)	Silica (SiO ₂)	Fe)	ctum (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO,)	Chloride (C1)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nestum	Non- carbon- ate	ance (micro- mhos at 25°C)	Нd	Color
Oct. 18, 1954	952	13	0.01	2.9	1.5	2.6	2.5		6.8	2.2	0.1	6.0	41	13	2	47.2	6.1	10
Nov. 16	365	18	. 02	4.2	1.9	3.8	1.8		4.7	2.2	Ξ,	ī,	21	18	0	62.6	2,0	10
Dec. 15	2.910	11	6	3.2	1.5	2.6	1.2		6.1	2.0	1.	'n	40	14	60	45.8	8.9	17
Jan. 24, 1955	663	6.7	.03	4.2	1.1	4.4	1.2	8	3.5	3.0	7.	9.	45	15	0	53.3	6.7	2
Feb. 18	952	8.8	10.	4.0	1.1	3.9	1.2		4.0	2.8	7.	80.	43	15	•	50.5	6.5	15
Mar. 17	2,560	7.7	8	3.6	1.1	3.0	1.4	16	5,2	2.5	-:	ı.	45	14	-	46.3	6.6	80
Apr. 19	1,630	12	\$	2.8	1.0	2.6	1.2		3.7	2.0	-:	6.	39	11	0	54.5	7.0	10
May 18	795	13	8	3.8	1.1	2.8	1.2		2.6	2.0	7	9.	42	1 1	•	53.7	6.8	œ
June 21	009	15	8	3.6	1.3	3.1	1.1		1.5	2.0		e.	43	14	0	52. 1	7.2	6 0
July 19	204	12	10.	3,8	1.3	3.5	1.4		1.8	2.0	-:	ī.	46	12	0	55.0	2.0	23
Aug. 22	106	13	6	3.2	1.1	3.1	1.8	19	3.3	2.2	7.	æ.	38	13	0	48.9	6.6	മ
Sept. 19	326	16	6	4.4	1.3	4.0	1.6		3.1	2.0	7.	e.	26	16	•	58.1	7.0	က

ROANOKE RIVER BASIN -- Continued

DAN RIVER AT PACES, VA.

LOCATION. --At gaging station at highway bridge, 0.5 mile southeast of Paces, Halifar County, 0.5 mile upstream from Big Toby Creek, 2.7 miles upstream from Birch Creek, and at mile 36.0.

DRAINAGE AREA.--2,550 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: January 1954 to September 1955.

Sediment records: January 1954 to September 1955.

EXTREMES, 1954-55.--Specific conductance: Maximum daily, 245 micromhos Oct. 14; minimum daily, 36.5 micromhos Oct. 17.

Water temperatures: Maximum 90°F July 5 23 Aug 6; minimum freezing point

EXTREMES, 1904-95.--Specific conductance: Maximum daily, 245 micromnos Oct. 14; minimum daily, 36.5 micromhos Oct. 17.

Water temperatures: Maximum, 90°F July 5, 23, Aug. 6; minimum, freezing point Dec. 7, 8, Feb. 12.
Sediment concentrations: Maximum daily, 2,263 ppm July 13; minimum daily, 13 ppm Jan. 6.
Sediment loads: Maximum daily, 76,900 tons Oct. 16; minimum daily, 16 tons Oct. 13.
EXTREMES, January 1954 to September 1955.--Specific conductance: Maximum daily, 245
micromhos Oct. 14, 1954; minimum daily, 36.5 micromhos Oct. 17, 1954.
Water temperatures: Maximum, 91°F July 3, 14, 1954; minimum, freezing point Dec. 7, 8, 1954, Feb. 1955.

8, 1954, Feb. 12, 1955. Sediment concentrations: Maximum daily, 2,263 ppm July 13, 1955; minimum daily, 13

ppm Jan. 6, 1955. Sediment loads: Maximum daily, 76,900 tons Oct. 16, 1954; minimum daily, 14 tons

Sept. 29, 1954.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	re (F) OI	Feb.	Mar.					A	0
Day				Jan.			Apr.	May	June	July	Aug.	Sept.
1	83	53	43	48	42	55	55	62	78	84	85	80
2	82	51	44	51	42	52	59	69		85	88	74
3	82	49	42	49	42	52	59	69		87	88	72
4	88	49	42	48	40	52	58	79		87	87	73
5	84	49	41	53	41		54	75	80	90	88	74
6		50	37	53	42	57	56	72	80		90	71
7	68	49	32		42	52	60	72	78	81	88	80
8	61	50	32	47	42	51	61	74	75	82	83	78
9	70			47	44	53	63	72	72	84	79	73
10	75	50	38	45	46	53	65	74	72	80	78	78
11	74	51	38	43	45	55	62	74	72	79	78	80
12	76	53	38	41	32	69	64	73	70	74	75	79
13	79	53	38	41	38	61	63	67	68	75	80	74
14	77	53	42	39	37	58	61	65	71	75	76	75
15		52	42	42	41	52	63	66	72	79	76	76
16	62	52	42	40	45	59	65	70	72	79	77	79
17	59	54	48	42	45	55	65	70	76	85	75	78
18	57	56	45	41	46	54	63	70	78	89	75	79
19	52	59		37	47	49	63	75	76	88	77	74
20	51	58	41	39	49	50	71	76	79	87	80	79
21	58	55	38	38	49	51	69	76	80	88	84	78
22	60	52	36	41	51	54	71	76	84	88	84	76
23	60	48	40	38	53	55	72	75	81	90	80	74
24	63	48	40	40	46	56	70	74	83	84	81	76
25	64	48	40	40	49	52	66	74	80	87	79	73
26	69	42	40	42	50	53	62	75	79	88	87	71
27	66	44	44	40	51	48	60	78	79	87	87	72
28	63	44	45	39	50	48	59	78	81	87	84	75
29	62	45	50	39		48	66	79	80	82	83	76
30	56	43	51			51	66	80	82	83	84	76
30	55		48	38		52				82	80	
Aver- age	67	50	41	43	45	- 54	63	73	77	84	82	76

ROANOKE RIVER BASIN -- Continued

DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1954 to September 1955

		Suspend	iea seaimen	, water year	r October 19	o4 to septem	Der 1900		
		October			November			December	
ŀ			3 - 3				 		
	Mean		d sediment	Mean		d sediment	Mean	Suspende	d sediment
Day	dis-	Mean	m-	dis-	Mean		dis-	Mean	١
,	charge	concen-	Tons		concen-	Tons		concen-	Tons
- 1		tration	per	charge	tration	per	charge	tration	per
i	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
-									
1	465	33	41	1,080	23	67	2,680	124	897
2	525	190	269	900	19	46	2,040	65	358
3	515	126	175	1,000	19	51	1,790	53	256
4	400	51	55	1,100	27	80	1,610	48	209
5	320	35	30	1,350	33	120	1,500	28	113
******	020	- 55	. "	1,550	0.0	120	1,500	20	113
ا م	308	24							
6			20	1,250	38	128	1,790	45	217
7	400	38	41	1,250	30	101	3,240	117	1,020
8	320	23	20	1,020	18	50	3,160	52	444
9	332	19	17	925	20	50	22,460	59	392
10	284	22	17 1	1,080	26	76	3,640	119	1,170
]. [j	
1	340	24	22	1,000	18	49	3,480	105	990
12	312	28	24	1,050	16	45	2,530	56	383
13	280	21	16	1,020	19	52	2,320	54	338
4	312	27	23	975	26	68	2,020	475	
							3,960		5,080
15	3,090	733	s13,900	850	20	46	11,700	553	17,500
16	91 000	1 200	"" ""		ایدا	1			
16	21,900	1,300	76,900 49,700	750	16	32	5,960	213	3,430
[7	32,200	572	49,700	950	16	41	3,560	116	1,110
8	11,700	306	9,670	1,050	22	62	2,760	71	529
19]	2, 180	223	1,310	2,390	138	891	2,840	66	506
20	1,550	126	a 527	2,660	114	819	3,080	67	557
	1						1	''	
21	1,450	60	235	5,720 6,740	500	7,720	2,250	59	358
22	1,350	47	171	6,740	509	9,260	2,040	50	275
3	1,200	37	120	3,320	209	1,870	1,850	36	180
4	1,100	33	98	2,600	87	611	1,670	29	131
5	975	34	90	2,460	75	498	1,730		
	""	37		2,400	''	490	1,730	22	103
6	850	32	73	1,730	188	878	1,550	20	84
7	975	36	95	1,730	60	280			74
28	925	31	77	1,730		100	1,450	19	
	1 100			1,610	25	109	1,180	16	51
29	1,100	49	146	2,110	114	649	1,500	17	69
30	1,150	51	158	3,000	141	1,140	1,550	27	113
31 [1,200	34	110				2,320	90	564
Total.	90,008		163,150	54,670		25,889	85,190		37,501
		January			February			March	
								,	
1	2,180	78	459	1,120	17	51	2,390	65	419
2	1,910	65	335	1,300	16	56	3,480	111	a 1, 040
2	1,670	47	212	1,450	24	94	2,840	84	644
4	1,450	31	121	1,500	29	117	2,460	63	418
5	1,550	24	100	1,400	24	91	2,840	340	2,610
	·		l [-			i '		,
6	1,550	27	113	1,910	136	701	8,390	1,233	27,900
7	1,500	25	101	13,600	791	29,000	8,860	912	21,800
8	1,450	23	90	19,600	684	36,200	4.680	737	9,310
9	1,400	22	83	7,980	291	6,270	4,680 3,400	252	2,310
0	1,250	20	68	4,120	146	1,620	2,760	109	812
•••••	1,230	40	🔭	9,120	1.350	1,020	2,700	109	012
1	1,250	23	78	3,080	97	807	2,460	87	578
2	1,500	27		9 560	97	932			
	1,550		113	3,560			2,460	134	890
3	1,610	28	122	3,240	78	682	2,840	144	1,100
4	1,500	24	97	2,320	64	401	2,840	325	2,490
[5]	1,400	20	76	2,110	48	273	2,180	141	830
. 1			[] _ [1	
16	1,350	13	47	2,250	. 39	237	2,680	136	984
اا	1,250	16	54	2,180	35	206	5,000	335	4,520
18	1.120	18	54	2,040	37	204	5,000	317	4,280
9	1,300	21	74	1,970	36	191	4,360	218	2,570
20	1,400	17	64	1,790	35	169	5,160	233	3,250
		1	1 1		1 1		ł		
1	1,400	14	53	1,610	28	122	5,320	291	4,180
22	1,400	16	60	1,500	27	109	4,280	175	2,020
23	1.550	21	88	1,730	30	140	5,080	199	2,730
4	1,550	17	71	1,850	31	155	4,680	209	2,640
5	1,450	20	78	2,180	31	182	3,400	157	1,440
- 1	-, -50	-		2,100	-1	.02	1 0,200	^*'	2, 220
26	1,610	17	74	2,180	27	159	3,080	82	682
7	1,550	17	71		30	171	2,530	63	430
	1,550			2,110			0.200		
8		23	96	1,970	31	165	2,320	50	313
8	1,000					1	2,040	47	259
18 19	1,610	19	83				_,		
8 9 0	1,610	17	71			1	2,040	39	215
28 29 30 31 Total.	1,610					79,505	2,040 1,970 113,820	39 37	215 197 103,861

s Computed by subdividing day.
a Computed from estimated concentration graph.

ROANOKE RIVER BASIN -- Continued

DAN RIVER AT PACES, VA. -- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		Suspended s	ediment, w	ater year Oct	ober 1954 to	September	1955Contin	nued	
		April			Мау			June	
	Moon	Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis-	Mean		Mean dis-	Mean		Mean dis-	Mean	
	charge	concen-	Tons per	charge	concen-	Tons	charge	concen-	Tens
	(cfs)	tration	day	(cfs)	tration	per day	(cfs)	tration	p∘r d\y
	(,	(ppm)	uay	(615)	(ppm)	uay	(015)	(ppm)	uty
1	1,850	34	170	2,180	68	400	1,550	112	469
2	1,850	34	170	1,850 1,730	61	305	1,350	73	266
3	1,670	78	352	1,730	54	252	1,250	82	277
4	1,670	181	816	1,790	54	261	1,200	73	237
5	1,550	63	264	1,790	51	246	1,150	73	227
6	1,610	42	183	1,670	48	216	1,080	58	169
7	1,790	44	213	1,610	44	191	925	73	182
8	1,730	37	173	1,550	45	188	2,320	912	5,710
9	1,670	29	131	1,350	47	171	3,400	786	7,220
10	1,500	24	97	1,250	45	152	1,970	1,018	5,410
			į.	1					
11	1,400	25	95	1,450	44	172	2,520	1,688	11,500
12	1,550	41	172	1,500	46	186	6,390	1,867	32,200
13	2,680	252	1,820	1,790	184	889	4,760	1,581	20,400
14	13,100	1,331	s 50,400	3,720	340	3,410	2,110	713	4,060
15	22,400	1,096	66,300	2,760	296	2,210	1,790	291	1,410
16	26,500	698	49,900	1,970	189	1,010	1,610	121	526
17	13,100	359	12,700	1,550	102	427	1,450	116	454
18	4,600	233	2,890	1,610	70	304	1,400	107	404
19	3,560	165	1,590	1,550	68	285	1,400 1,300	82	288
20	3,080	126	1,050	1,500	52	211	1,250	92	311
				l .					
21	2,840	87	667	1,450	58	227	1,200	107	347
22	2,680	87	630	1,300	58	204	1,250	112	378
23	2,530	68	465	2,390	582	3,760	1,200	78	253
24	2,320	107	670	3,400	354	3,250	1,990	678	s 5, 830
25	4,280	1,018	11,800	5,480	1,168	17,300	2,460	1,489	9,890
20	6,830	1,057	19,500	3,320	951		1 7700	606	0.000
26	4,040	834	9,100	2,320	369	8,520	1,730		2,830
27 28	3,000	378	3,060	1,910	262	2,310 1,350	1,180 1,050	257 146	819 414
29	2,600	146	1,020	1,730	456	2,130	1,030	112	308
30	2,320	82	514	1,550	194	812	1,020	87	240
31	-,		"	1,250	136	459	1,020	"	240
Total.	142,300		236,912	62,270	- 100	51,808	54,875		112,893
====	142,000		200, 012	02,210		31,606	34,013		112,000
		July		l	August		l	September	•
1	1,020	79	218	1,150	203	630	1,080	56	163
2	1,020	97	267	1,250	157	530	1,300	118	414
3	1,000	92	248	1,250	151	510	2,180	240	1,410
4	800	72	156	1.050	120	340	3,640	333	3,270
5	1,500	73	296	1,000	107	289	2,600	199	1,400
6	1,000	112	a302	975	99				400
7	1,500	223	a 903		259	261	1,610	111 87	483
8	1,080	306	892	1,020 1,610	529	s 860	1,450		341 270
9	1,020	344	947	2,640	846	s 2, 430 s 6, 950	1,300 1,200	77 65	210 211
10	1,180	595	1,900	2,040	739	4,070	1,200	49	152
1				1			-,,,,,,	- 1	
11	1,500	728	2,950	1,400	398	1,500	1,000	105	284
12	4,760	1,328	s 19, 200	1,300	277	972	900	59	143
13	9,220	2,263	56,300	1,400	248	937	850	31	71
14	5,320	993	s 15,000	1,920	379	s 2, 540	1,050	57	162
15	2,390	631	4,070	5,880	1,326	21,100	1,000	52	140
16	1,850	284	1,420	2,530	698	4,770	950	39	100
17	1,610	147	639	5.220	647	s 12,400	950	37	95
18	1.120	130	393	19,800	1,205	64,400	875	31	73
19	1,050	107	303	20,400	883	48,600	850	24	55
20	1,150	116	360	5,970	708	11,400	675	33	80
l l									
21	1,120	97 77	293	2,390	243	1,570	800	36	78
22	1,150		239	1,790	144	696	825	31	69
23	1,050 950	81 80	230 205	1,450	122	478	825	29	65
24	1,220	494	1,630	1,550 1,450	90 83	377 325	900 975	30	73 92
25	1,220	207	1,000	1,400	83	320	8.19	35	92
26	2,000	485	2,620	1,300	67	235	850	35	80
27	1,730	717	3,350	1,180	61	194	800	33	71
28	1 200	560	1,810	1,150	35	109	975	34	90
29	1,220	299	985	1,020	44	121	950	36	92
30	1,300	266	934	900	53	129	1,100	38	113
31	1,450	359	1,410	1,000	58	157			
Total.	55,480		120,470	95,185	1	189,880	35,610		10,120
1000.									

 Total discharge for year (cfs-days)
 929,168

 Total load for year (tons)
 1,135,249

s Computed by subdividing day.
a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

DAN RIVER AT PACES, VA. -- Continued

Particie-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal hube; D, decandation; P, pippeter, S, siever, N, in native water; W, in distilled water; C, remnically dispersed; M, mechanically dispersed

		Methods of analysis		BWMC	BN	BWMC	BWMC	BWMC	BN	BN	BWWC	BN	BWMC
			1.000	94	100	97	66	96	100	;	;	;	100
			0. 500	68	82	25	97	88	66	100	100	100	88
			0.350										
		illimeters	0.250	98	8	88	85	18	9.1	8	66	86	96
	,	ize, in m	0,125	80	83	72	82	77	68	96	92	94	86
rsea)		Percent finer than indicated size, in millimeters	0.062	74	48	67	77	7.7	87	25	92	84	81
ally dispe	ediment	ner than i	0. 031	67	28	09	99	16	83	8	98	28	7.7
mechanic	Suspended sediment	Percent fi	0.016	89	48	23	26	73	74	73	78	44	7.1
rsed; M,	ng.	_	0.008	46	38	42	45	67	62	83	89	36	90
ally dispe			0.004	35	28	33	36	52	48	48	57	22	49
;, chemic			0.002										
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	2,760	5,250	1,380	2,390	1,660	3,070	5,950	6,250	5, 700	1,830
¥, ma		Concentration	of sample (ppm)	1,980	1,610	614	848	1,180	1,030	1,640	1,650	1,650	633
	Water												
		Discharge		15,000	19,000	12, 500	16,600	9,860	22, 900	6,130	6, 130	19,200	21,600
		Time		12:27 p.m.	9:44 a. m.	10:00 a.m.	8:30 p. m.	10:07 p. m.	5:10 p.m.	10:43 a.m.	10:43 a. m.	12:27 p. m.	1:30 p. m.
	í	Date of collection		Oct. 16, 1954	Oct. 16	Dec. 15	Feb. 7, 1955	Mar. 6	Apr. 15	June 12	June 12	Aug. 18	Aug. 19

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT BUGGS ISLAND, VA.

LOCATION.--At gaging station 1,200 feet downstream from John H. Kerr Dam, 2.4 miles upstream from Allens Creek, 5.3 miles upstream from bridge on U. S. Highway 1, 6.7 miles southeast of Boydton, Mecklenburg County, and at mile 178.4.
DRAINGE AREA---7, Sourer miles, approximately.
RECORDS AREA---7, Sourer miles, approximately.
RECORDS ARIALABLE.--Chemical analyses: October 1951 to September 1952, October 1954 to September 1955.
REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

1		1 0	28	35	35	55	22	8	100	82	35	22	g
		Color						_					
		핊	7.0	<u>.</u>	7.3	7.1	-	-	<u>چ</u>	7.6	7.	-	7.
	Specific conduct-	ance (micro- mhos at 25°C)	98.1	100	901	93.5	91.8	85.2	90.2	85, 2	97.3	8.98	69. 2
	ness ICO _s	Non- carbon- ate	0	0	•	0	0	0	0	0	1	0	1
	Hardness as CaCO,	Calcium, mag- nesium	31	30	28	34	22	22	29	27	31	22	22
	Dissolved solids	(residue on evap- oration at 180°C)	9	67	75	57	92	84	11	\$	75	69	68
r 1955		(NO ₃)	1.4	1.5	7.	1.5	1.9	1.3	1.7	1.7	G.	. 7	1.7
Septembe	:	Fluoride (F)	0.1	Ξ.	Τ.	.1	٥.	٥.	٥.	٥.	?	Τ.	1.
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Chloride (C1)	4.9	5.2	6.1	5.1	5.0	3.8	4.4	4.9	4.2	4.3	2.9
r year Oct		Sulfate (SO ₄)	5.5	6.5	6.7	5.5	5.7	4.5	6.4	4.7	9.2	;	7.4
illion, wate	Bicar-	bonate (HCO ₃)	43	4	88	34	33	33	35	34	37	38	53
arts per m	Potas-	sium (K)	2.0	2.1	2.5	2, 1	1.9	1.5	1.6	2.0	1.9	2.0	2.0
yses, in pa	,	(Na)	7.0	7.5	8.1	6.4	6, 1	5.2	4.8	5.0	0.9	;	4.0
nical anal	Mag-	nesium (Mg)	2.8	2.2	1.9	1.8	1.8	1.8	2.0	2.3	2.3	1.9	1,8
Chei	cal-	cium (Ca)	7.7	8.6	7.9	6.7	7, 1	7.2	8.4	7.0	8.7	8.8	6.9
	,	(Fe)	0.53	97	. 13	. 32	. 24	. 32	. 23	.28	8	. 20	.33
		(SiO ₂)	7.8	5.9	7.5	9.1	12	12	8.3	9.0	11	7.7	9.0
	Меал	discharge (cfs)	5,930	4,500	11,000	9,630	4,380	10,800	28,300	10,800	7,950	32,200	4,180
		Date of collection	Oct. 13, 1954	Nov. 16	Dec. 15	Jan. 5, 1955	Feb. 16	Mar. 23	Apr. 19	June 13	July 19	Aug. 24	Sept. 14

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT JAMESVILLE, N. C.

LOCATION.--At boat dock in Jamesville, Martin County, and 1 mile downstream from lower mouth of Devils Gut. MarkIAGE AREA,--9,247 square mailes. RECORDS AVAILABLE.-Chemical analyses: October 1954 to September 1955. REMARKS.--No discharge records available for this etation.

Chemical analyses, in parts per million, water year October 1954 to September 1955

1		Color	ا	.~	۵,	~		_		_	~	~	_	
			┝	-			15		_	_				\dashv
		Hd	9	-	9	6.7	9	9	9	6.9	7.3	9	-	9
	Specific conduct-	ance (micro- mhos at 25°C)	125	117	116	<u>1</u> 0	102	95.3	111	101	113	101	94.7	89. 2
	. see	Non- carbon- ate	1	0	0	•	0	0	0	0	0	0	0	0
	Hardness as CaCO,	Calctum, mag- nestum	40	32	32	58	28	25	31	32	32	31	28	29
	Dissolved solids	(residue on evap- oration at 180°C)	98	89	73	69	92	49	73	73	73	02	69	74
7901		(NO ₃)	0.5	۳.	6.	1.2	1.1	∞.	1.4	1.3	® .	1.1	ı.	1.1
andor or to		Fluoride (F)	0.1	0.	-:	7.	-:	-	-	-:	-:	-:	-:	
Chemical analyses, in parts per million, water year October 1905 to September 1900	:	Chloride (C1)	5.5	5.5	4.0	5.8	6.5	5.2	4.5	5.0	4.2	4.5	4.0	4.0
THEOR JOHN	:	Sulfate (SO ₄)	10	8.7	9.2	9.1	12	9.7	9.1	7.5	7.7	5.4	5.2	4.7
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Bicar-	bonate (HCO ₃)		45						42				
t per to per	Potas-	sium (K)	1.5	2.6	2.2	2.5	2.2	1.8	1.4	1.9	1.6	2.0	2.0	2.2
, confirm	:	Sodium (Na)	8.1	8.7	9.5	89 9.	9.4	7.4	7.4	6.7	7.2	5.3	6.0	5.4
	Mag-	nesium (Mg)		2.0			2.4	1.7	2.1	2.3	1.9	2.1	1.9	1.9
,	Cal-	cium (Ca)	11	9.5	æ.	6.7				9.1				
		Fe)	0.59	9.	<u>.</u>	.02	9.	.0	. 12	80.	.07	9.	=	.27
		(SiO ₂)	10	7.3	5.5	10	6.3	10	7.9	8.4	10	2	9.1	9.3
	Mean	discharge (cfs)												
		Date of collection	Oct. 15, 1954	Nov. 15	Dec. 15	Jan. 15, 1955	Feb. 15	Mar. 15	Apr. 15	May 16	June 15	July 15	Aug. 15	Sept. 15

ROANOKE RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ROANOKE RIVER BASIN IN NORTH CAROLINA

		Color		9		8		7		&		35	
		рн		6.9		7.0		7.1		6.9		6.8	
	Specific conduct-	ance (micro- mhos at 25°C)		31.2		40.8 50.3		44. 7 50. 8		67. 7 85. 6		80.7 94.5	
	Hardness as CaCO ₃	, Non- carbon-		e 0		00		00		00	i	00	
	Har as C	Calcium, mag- nesium		12		14 16		14 15		21		21 26	
	Dissolved solids	(residue on evap- oration at 180°C)		31 a27		42 a 43		46 a 42		51 a 58		63 a 61	
r 1955		Nitrate (NO ₃)		1.0		0.0		0.0		1.1		1.0	
to Septembe		Fluoride (F)		0.0		0.0		0.1		0.0		0.1	
ober 1954	:	Chloride (C1)	300	1.2	E.	2.2	жтн	2.0	ΑI	4.2 6.2	IND NECK	2.4	
Chemical analyses, in parts per million, water year October 1954 to September 1955		Sulfate (SO ₄)	DAN RIVER NEAR FRANCISCO	3.9	MAYO RIVER NEAR PRICE	1.6	DAN RIVER NEAR WENTWORTH	2.0	SMITH RIVER AT SPRAY	2.6	ROANOKE RIVER NEAR SCOTLAND NECK	8.9	
illion, wat	Bicar-	bonate (HCO ₃)	RIVER NE	11) RIVER	18 26	RIVER NE	21	TH RIVE	35	RIVER NE	39	
arts per m	Potas-	sium (K)	DAN	0.7	MAYO	1.3	DAN 1	1.6	SMS	2.1	ROANOKE 1	2.2	
lyses, in p		Sodium (Na)		1.9		3.1		3.4		7.0	_	6.8	
mical ana	Mag-	nesium (Mg)		1.2		1.7	•	1.2		2.1		1.9	
Che	-Cal-	cium (Ca)		3.0		3.0		3.4		4.7 5.6		5.2	
		Iron (Fe)		0.04		0.02		0.01		0.01		0.04	
		Silica (SiO ₂)	,	9.5		16		15		14		Ħ	
	9,0	charge (cfs)		250 102		320 178		943 583		473 259		4, 400	nstituents.
		Date of collection		Mar. 24, 1955		Mar. 9, 1955		Mar. 10, 1955 Aug. 25.		Mar. 10, 1955		Feb. 16, 1955	a Sum of determined constituents.

PAMLICO RIVER BASIN

ပ × FISHING CREEK NEAR ENFIELD,

LOCATION: --Temperature recorder at gaging station on right bank, 15 feet downstream from bridge on U. S. Highway 301, 2,000 feet downstream from Atlantic Cost Line Raliroad bridge. 2 miles southwest of Enfield, Hallfax County, and 44 miles downstream from Rocky Creek, and at mile 27.7. DRAINGE AREA.-521 square miles.

RECORDS AREA.-521 square miles: 0ctober 1948 to September 1949, October 1953 to September 1955.

RECORDS ANILLABLE.-Hater temperatures: Maximum, 86 F July 27-29, minimum, 35 F on several days during December.

EXTREMES, 1948-49, 1953-55.--Water temperatures: Maximum, 86 F July 27-29, 1955; minimum, 37 F onc. 28, 1948.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955

ı	1	1																															1	ı
	September	min	92	76	74	55	ت ت	73	2	2	7	2	23	ជ	72	71	2	92	2	2	12	11	7.1	=	Ľ	71	7.	20	70	2	2	20		7.
	Septe	max	16	26	92	74	52	52	2	74	4.	74	73	73	23	72	12	20	12	12	71	F	71	F	17	=	F	7	2	2	2	2		2
	ust	min	82	82	84	88	83	8	84	84	8	82	81	75	22	75	92	3,2	92	92	92	92	92	92	3,6	11	26	92	12	92	92	92		8
	August	max	83	84	8	84	83	8	88	8	8	84	82	81	22	92	92	92	92	92	46	20	92	92	1	11	11	92	92	20	20	16	2	23
	ly [min	74	75	7.7	42	8	81	81	82	81	42	482	75	75	75	75	7.5	11	42	82	83	84	\$	%	84	\$	84	8	22	\$	88		2
	July	max	75	77	22	8	81	81	8	83	82	81	48	48	75	75	75	44	79	85	83	\$	25	8	32	82	8	8	98	8	98	\$6	8	81
	ue	min	74	23	72	20	71	12	2	72	69	89	89	89	69	2	20	7.0	20	Ľ	11	11	72	74	9.	92	7	72	72	22	72	72	1	12
	June	max	92	74	2	72	17	73	2	2	72	69	89	2	5	2	2	02	72	72	11	7.5	47	92	76	11	11	74	72	72	22	74		72
	May	min	62	62	83	64	64	99	67	89	89	89	69	20	20	20	89	67	89	29	87	68	2	2	2	42	72	72	74	22	92	76	9	69
	M	max	62	64	64	75	99	89	89	69	69	69	2	2	70	20	2	89	89	89	89	40	02	2	7.	42	74	74	72	92	92	92	۹	20
raph/	E.	min	20	25	25	22	26	57	22	28	28	28	60	9	62	62	62	69	63	99	64	99	89	2	5	2	12	89	99	64	62	62	;	62
Continuous ethyl alcohol-actuated thermograph7	April	max	52	25	29	26	57	57	28	28	28	09	90	62	62	62	62	8.3	25	64	99	68	10	2	07	12	2	11	89	99	2	62	:	63
tuated	March	min	46	48	ß	2	25	26	22	Z	22	25	25	25	54	57	57	57	28	28	22	25	25	25	75	7	72	Z	22	8	2	22	ž	23
cohol-ac	Ma	max	48	22	20	25	26	28	28	57	54	25	25	25	24	57	24	ŝ	83	28	28	55	52	25	¥	25	¥	26	26	22	53	21	2	54
ethyl al	uary	min	36	36	38	36	36	36	36	42	43	43	43	43	41	39	38	30	39	39	40	40	41	42	44	44	4	44	44	44	1	1	:	40
inous	February	max	36	36	36	36	36	36	42	43	43	43	43	23	43	41	38	39	39	40	40	41	42	44	44	44	44	44	44	46	:	:	:	41
Cont	January	min	42	44	42	42	45	45	44	43	43	43	41	41	40	38	37	37	37	37	36	37	36	36	36	36	36	36	36	36	36	36	98	38
,	Jan	max	44	46	46	45	45	45	45	44	43	43	43	41	41	49	38	37	34	37	34	37	37	36	36	36	36	36	36	36	36	36	36	40
	December	mim	44	44	42	41	41	38	37	37	32	32	35	32	32	32	35	35	32	35	38	38	38	88	36	36	36	36	38	36	36	38	42	34
	Dece	max	44	4	44	42	41	41	39	37	37	35	32	35	32	32	35	35	35	38	38	38	38	88	88	36	36	36	36	36	38	42	42	38
	November	mim	25	25	5	2	20	20	48	48	48	48	47	41	41	47	41	47	48	49	20	21	51	2	2	22	48	47	46	46	46	44	:	49
	Nove	max	24	22	25	51	20	20	20	48	48	48	48	47	41	41	47	4	48	22	21	21	51	5	21	2	20	49	47	46	46	4	1	48
i	oper	min	72	12	72	73	74	74	69	99	65	2	65	99	89	2	99	\$	62	9	9	20	28	28	28	22	24	57	24	28	8	24	25	45
	Octob	max	74	_		7.	74	16	74	69	99	99	89	69	2	72	-		. 64	_	9	9	29	28	8	28	24	24	28	28	82	8 1		65
		Uay	1	2	3	4	5	6	7.	8		10	11	12	13	14	15	16	17	18.	19	20	21	22	23.	24	25.	26	27	28	29.	30	:	Average

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GREENVILLE, N.

LOCATION.--At bridge on N. C. Highway 11, 600 feet downstream from Atlantic Coast Line Railroad bridge at Greenville, Pitt County, and at mile 21.0. DAANMED AREA. -2.260 square miles.

RECORDS AVAILABLE.-2.260 square miles.

EXTREMES 1955.--Dissolved solids: Maximum, 79 ppm Aug. 1-10; minimum, 56 ppm July 11-20.

Rardbess: Assimum atlay, 102 micromhos May 17; minimum dally, 43.4 micromhos July 15.

Specific conductance: Maximum atlay, 102 micromhos May 17; minimum dally, 43.4 micromhos July 15.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station

Color 122228 242 242 27 27 27 31 45 35 45 45 45 45 35 6.6 6.6 7.7 8.6 8.6 8.6 1.7.3 86.4.4.0 വയ 핂 6.6.6 Specific conductmhos at 25°C) 86.2 91.5 90.9 87.2 79.0 ance (micro-70.3 71.4 77.8 83.7 77.1 80. 87. 75. 76. 57. 83. carbon-F-10:00 00 00 ~ C ~ C ~ C Nonate Hardness as CaCO, Calcium, magnesium 22 24 25 11 11 12 818868 119 Dissolved solids (residue on evapat 180°C oration 77 77 77 77 85 86 882233 71 69 69 65 72 Nitrate (NO₃) 1.2 1.0 1.0 1.0 8. 1.3 1.9 Chemical analyses, in parts per million, January to September 1955 Fluoride 0,00,770 ~0000 200 Ξ Chloride (Ci) C 2 8 8 0 2 9.5.0.08.0 6.7.8 6.0 Sulfate (SO₄) 9.8.7.3 5.5 112451 Bicar-bonate (HCO₃) 2222222222 Potas-4 6 6 8 8 8 sium (K) 202 Sodium (Na) 2.02.7.02.7 6.22.0 40.0 ര് ജ് ശ് Mag-nesium (Mg) 4.0.0.0.0.4 8 - 6 5 5 5 0 0.00.00.4.0. 0.00.00.00 200 Cal-cium (Ca) R. 4. 6. 0.00 20.00 80.00 80.00 988893 17 06 05 05 29 989 Fe) Silica (SiO₂) 5 æ 4 854888 222222 Mean discharge (cfs) : : : : : : 1-10 of collection 1955 Mar. 1-10. Mar. 11-20. Mar. 21-31. Apr. 1-10... Apr. 11-20. Apr. 21-30. Jan. 21-31.. Feb. 1-10... Feb. 11-19... Feb. 20-28.. 21-31. May 1-10.. May 11-20. May 21-31. June 1-10.. June 11-20. July 11-20 . July 21-31 . 11-20 rune 21-30 1-10, July 1-10

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GREENVILLE, N. C. -- Continued

	Hardness Specific as CaCO, conduct-	Calcium, Non- (micro- pH Color mag- carbon- mhos at a 25°C)		17 4 66.9 7.1 60	6.4	4 62.1 6.6	20 4 76.9 6.5 50	6.5	19 3 77.5 45	
	Dissolved solids	(residue on evap- oration at 180°C)	42	63	a 72	99	23	72	70	
inned		(NO ₃)	1.7	2.1	2.5	89.	2.7	2.4	1.3	
955Cont			0.0	٥.	٥.	0.	٥.	0.	0.0	
eptember 1	:	Choride Fluoride (C1)	8.8	5	4.0	4.0	7.0	6.0	6.5	
Chemical analyses, in parts per million, January to September 1955Continned	;	(SO ₄)	5.8	5,8	7.7	8.7	7.3	4.2	8.2	
million,	Bicar	bonate (HCO ₂)	29	16	17	16	19	11	20	
n parts per	Potas-	stum (K)	2.1	2.4	2.6	2.6	2.2	2.5	1.9	
ınalyses, i	;	Sodium (Na)	7.0	4.3	3.1	4.0	8.6	4.3	6.1	ion.
hemical a	Mag-	nesium (Mg)	2.1	1.0	1.1	1.6	1.4	1,5	1.6	ineral constituents 40 parts per million
,	Caj-	ctum (Ca)	6.0	2.3	4.4	4.1	2.8	4.6	5.2	s 40 part
		(Fe)	0.10	. 12	£.	. 52	. 15	. 67	0.15	nstituent
		Silica (SiO ₂)	14	9.3	9.5	9.5	2	9.5	13	ineral co
	Mean	discharge (cfs)		_						sent; sum of m
		Date of collection	Aug. 1-10, 1955	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average	a Organic matter present; sum of mi

PAMLICO RIVER BASIN -- Continued

IAR RIVER AT GRIMESLAND, N. C.

LOCATION .-- at bridge on county road, 1 mile northeast of Grimesland, Pitt County, 0.3 mile upstream from Chicod Creek, and 1.8 miles upstream from Grindle Creek

DRAINGE AREA (revised).--2,740 square miles.

RECORDS AVAILEDE.-Chemical analyses: September 1955.

RECORDS AVAILEDE.-Chemical analyses: September 1955.

RECORDS AVAILEDE.-Chemical analyses: September 1955.

EXTREMES. 1954-55.--Dissolved solids: Maximum, 10,500 ppm Oct. 15 (p.m.).

Extremes: Maximum, 10,400 ppm Oct. 15 (p.m.); minimum, 13 ppm July 21.

Specific conductance: Maximum qaily, 15,600 micromhos Oct. 15 (p.m.); minimum, 35 F Poct. 23 (a.m.).

Water temperatures: Maximum, 92* 75 July 28, Aug. 3; minimum, 35 F Poct. 23 (a.m.).

Water temperatures: Maximum, 92* 75 July 28, Aug. 3; minimum, 35 F Poct. 23 (a.m.).

Water temperatures: Maximum, 92* 8 a.m. and 4 p.m.) to Apr. 14; once daily (1 p.m. to Sept. 30). Samples collected in morning and afternoon were composited unless otherwise noted. Records of specific conductance of samples available in district office at Raleigh, N. C. No discharge

records available for this station

Color 11068 12 6.6 6.8 6.8 6.8 8.8 7.8.7.0.0.0 6.8 6.6 6.9 뛶 1,760 1,050 3,510 5,640 15,600 8,520 672 275 1,880 1,140 2,590 1,510 3,470 6, 130 2, 440 516 conduct. 251 mhos at 25°C) ance (micro-864 246 33 **¥** 252 \$ 346 346 563 880 880 895 carbon-Nonate Hardness as CaCO, Calcium, mag-nesium 180 116 388 600 1,940 930 230 123 84 125 39 64 62 286 Dissolved oration at 180°C) 2,010 3,570 1,810 solids (residue on evap-368 158 010 629 10,500 1,310 280 134 966 Nitrate (NO₃) 1.8 ----ŀ 3.1 Chemical analyses, in parts per million, September 1954 to September 1955 Fluor ide (F) 2000 0 | 7 | 7 | Chloride 480 280 1,070 1,750 5,790 2,750 1,020 ਹੁੰ 169 55 525 305 49 920 122 Sulfate (SO₄) 35 26 81 56 28 76 50 161 161 265 265 389 389 287 F Bicar-bonate (HCO₃) 33 33 33 31 31 34 34 34 34 36 37 51 51 45 63 6.0 15.6 9.2 9.5 9.5 Potas-sium (K) 5.2 3.6 110 2 7 22 Sodium 3,200 1,080 406 2 181 103 560 (Na) Mag-nesium (Mg) 8. 3 32 19 19 19 182 50 28 Z 13 9.6 21 16 Cal-Chum (Ca) 12 848442 2 2 52 32 0.10 8 2:2:2: 88 3 8 ខ Fe) Silica (SiO₂) 7.7.4.8. 4.8.8.8 . i 8.6 12: ł Mean discharge (cfs) (a. m.), 1954
Sept. 24-25
Sept. 27 (p. m.), 28-30
Oct. 1, 2 (a. m.), 3, 4,
(p. m.), 5 (p. m.) Oct. 8 (a. m.) Oct. 9 (p. m.), 10-14. Oct. 15 (a. m.) Oct. 16 (a. m.) Oct 16 (p. m.), 17-21...
Oct. 22, 23 (a. m.).
Oct. 23 (p. m.), 24
Oct. 24 (a. m.).
Oct. 24 (a. m.), 26
Oct. 25 (p. m.), 26 Oct. 4 (a. m.), 5 (a. m.), 6 (a. m.)..... Oct. 6 (p. m.), 7, 8, (p. m.), 9 (a. m.) Sept. 23 (p. m.) 26, 27, Date of collection

PAMLICO RIVER BASIN -- Continued

TAR RIVER AT GRIMESLAND, N. C.--Continued

!		Color	۱ ۵	11	: :	: :	:	:=	a	, ;	6	17	29	;	33	72 :	<u> </u>	25	: :	22	23	:	17	á	R :	;
		Hd	4.4.	9.9	4.6	- 	· 0	# 9			6.4	4	6.7	6.7	8.8	4.1	9.9	5.5	6.3	9.9	9.6	6.9	6.7		6.5	6.2
	Specific conduct-	ance (micro- mhos at 25°C)	6,100	3,350	1,740	811	1,600	2,650	880	7,310	11,800	13,200	5,350	2,460	3,660	2,910	4,600	2,410	360	117	105	271	8, 290		290	126
	ess 30,	Non- carbon- ate	649 917	326	148	55	158	254	680	851	1,340	1,480	540	227	350	272	453	222	26	=======================================	483	23	920	;	217	 Os
	Hardness as CaCO,	Calcium, mag- nesium	680 955	354	173	98	183	280	1000	785	1,380	1,520	57.0	252	376	295	480	242	42	22	504	34	950		35	22
	Dissolved solids	(residue on evap- oration at 180°C)	3,360	1,730	: :		!	1,350	080	3 :	6,860	8,290	3,020	1	1,970	1,550	008,6	1,260	; ;	88	180	;	4,980		288	:
Continued		Nitrate (NO _s)	3.0	3.1	1 1	1	;	8.	å	;	1.8	1.3	2.6	;	2.9	1.5	۰. ;	2.3	1 1	æ.	œ. í	:	2.	,	f. 1	1
er 1955C		Fluoride (F)	0.1	1.	; ;	: :	:	; =:	,	: :	-:	~!	~!	;	٦.	7:	: :	Ξ.	; ;	=	7. 1	1	-:	•	. ;	- : -
Chemical analyses, in parts per million, September 1954 to September 1955Continued		Chloride (C1)	1,920	975	4 60	192	410	750	000	2,300	3,950	4,450	1,650	700	1,050	840	3, 230	670	83	18	1450	51	2,720	;	58	12
mber 1954		Sulfate (SO ₄)	142 396	47	6.5	1 9	21	28	906	351	286	661	235	29	159	131	212	108	62 74	12	14	20	402	;	18	16
lion, Septe	Bicar-	bonate (HCO ₃)	38 46	34	3 3	38	30	32	4	45	54	54	37	30	31	28	33	24	19	14		7	37	,	81	16
ts per mil	Potas.	stum (K)	44	22	: :	: :	1	181	**	5	06	06	44	:	44	20	e :	18	1 1	2.1	1.3	: :	90	,	4, 1	:
ses, in par		Sodium (Na)	1,050	541	; ;	: :	1	418	000	2,086	2,130	2,640	006	ï	585	452	1,840	372	11	12	9.8	1	1,520	•	2 !	:
ical analy	Mag.	nesium (Mg)	153 190	89	31	3 7	34	2.5	906	156	283	309	113	55	74	28	232	8 3	6.3	1.7	101.9	3.4	196		xo, 44, xo 44	1.7
Chem	Cal-	cium (Ca)	20 70	30	18	12	81	23	ä	28	84	100	43	10	53	22	3.4	19	6. 4	6.0	ຕ່ອ	8 8	28		∞ w ∞ w	6.0
		Iron (Fe)	0.04	.03	! ;	:	:	: 80	8	3 1	40.	10.	.05	:	.04	.12	70 :	.07	1 1	.03	8 1	1	90.	;	8 1	;
		Silica (SiO ₂)	8.2	10	; ;	: :	:	1 01	6	9 ;	6.7	8.6	14	!	14	12	;	4.	: :	-11	==	: :	9.5	ļ	17	;
	Мери	discharge (cfs)																								
		Date of collection	Oct. 26 (p.m.), 27, 28, (a.m.), 29, 1954	Nov. 1, 2 (a.m.)	Nov. 2 (p. m.)	Nov. 3 (p. m.)	Nov. 4 (a. m.)	Nov. 5-6, 7 (a.m.)	Nov. 7 (p. m.), 8 (a. m.),	Nov. 8 (p. m.)	Nov. 11-15	Nov. 16-24	(p.m.)	(p.m.), 30	Nov. 27, 28 (a. m.), 29, 30 (a. m.)	Dec. 1-2.	Dec. 3-10	Dec. 12, 13 (a. m.)	Dec. 14 (a. m.)	Dec. 14 (p. m.), 15-20	Dec. 28-27	Dec. 28 (a. m.)	Dec. 28 (p. m.), 29-31	Jan. 1-2, 5 p. m.), 6,	Jan. 3, 5 (a. m.), 1955.	Jan. 4 (a. m.)

AL - 44

; ;	;	: :	;	i	1	;	19	33	37	23	23	28	28	20
6.8	6.7	6.6	6.7	6.3	9.9	8.9	8.9	6.7	6.4	6.1	9.9	4.9	6.5	6.8
1,350	1,860	1,320	2,310	293	797	547	131	110	72.5	86.8	87.0	77.9	19.4	80.9
122	170	116	233	18	89	43	11	12	-	=======================================	6	10	1-	2
08 8£1	061	136	254	38	98	62	28	25	16	21	61	19	19	18
11	!	11	i	;	;	;	96	18	65	73	73	89	19	72
11	;	11	;	;	;	;	1.2	80.	∞.	æ,	9.	ro.	8.	9.
11	;	11	1	1	i	;	0.0	4.	=:	7.		Ŧ.	7.	0.
360	520	350 19	099	22	210	82	91	::	8.0	9.5	9.0	7.2	6.8	7.5
38	98	64 14	63	23	41	32	17	12	12	14	13	12	11	=
20	25	25	26	24	22	23	81	16	13	12	13	11	15	91
11	;	11	1	1	1	ï	2.0	1.2	1.1	6.	6.	7.	1.9	1.9
11	;	11	1	;	;	;	13	01	6.3	7.3	7.5	6.5	6.1	6.5
26	98	1.7	49	4.6	12	9.7	3.2	1.6	1.4	1.8	1.5	1.6	1.7	1.2
9.6	11	14 6.8	21	7.6	01	8.8	5.2	7.2	4.2	4.	5.2	5.2	4.8	5.2
11	;	; ;	;	;	;	;	0.02	80.	90 .	80.	80.	80.	.07	. 22
11	ŀ	11	1	1	;	ŀ	14	91	9.6	12	12	12	14	15
											_	•		

7, 1955 10 (p.m.), (p.m.), 17 (p.m.), 18 (p.m.), 18 (p.m.), 19 (p.m.), 19 (p.m.), 10 (p.m.), 21 (p.m.), 21 (p.m.), 21 (p.m.), 21 (p.m.),	Jan. 22 (a. m.), 23 (p. m.). Jan. 24 (a. m.), 25 (a. m.). Jan. 26-28, 29 (p. m.), 30 (p. m.), 31	Feb. 1, 8 (a.m.), 9 (a.m.), 10	far. 1, 3-4, 5 (a.m.), 6 (a.m.), 7-10 far. 11, 12 (p.m.), 13 (p.m.), 14-17, 18 (a.m.), 19 (a.m.), 20 (p.m.), 28 (p.m.), 29-30
Jan Jan Jan Jan Jan Jan Jan Jan Jan Jan	E E E	Fer Fer Fer	Ma. Ma

PAMLICO RIVER BASIN--Continued TAR RIVER AT GRIMESLAND, N. C.--Continued

			_ -						_				_	•				_								
		Color	45	33	45	2 :	8	62	45	20	:	:	:	;	!	45	40	9	:	:	91	011	æ	3 5	110	:
		Hd	6	0	8.8	٠.	ė,	ø.	6	ø	ø,	6.7				8.8	6.7	6.3	6.0	5.9	7.0	7.1			. e.	;
	Specific conduct-	ance (micro- mhos at 25°C)	88.0	89.6	98.0	102	83.6	87.1	85. 4	65.5	49.9	159	328	1,680	788	109	7, 460	6,730	140	96.1	96.0	78.9	8		67.0	1
	ness C O ,	Non- carbon- ate	2	8	-	0	,,	4	-	7	7	01	24	148	25	0	781	716	æ	6	80	-	•		- m	;
	Hardness as CaCO,	Calcium, mag- nesium	20	8	23	23	81	20	19	16	13	28	44	172	88	24	822	740	19	18	20	23	4		3 2	:
	Dissolved solids	(residue on evap- oration at 180°C)	72	72	18	8 ;	2	74	73	61	:	:	;	!	1	79	4,420	3,960	:	:	81	11	62	2 4	00 75	1
Continued		(NO ₃)	9.0	9.	1.9	2.1	2.	1.1	1.3	1.3	1	!	1	!	;	1.5	;	;	;	;	∞.	∞.	4			ŀ
er 1955(Fluoride (F)	0.1	٥.	0.	0.	N. (e .	0.	٥.	!	:	:	1	;	0.	0.	0.	;	;	0.	0.	-		? 0.	:
September 1954 to September 1955Continued	1	(C1)	8.2	8.5	8.2	2	7.5	о Э	8.2	4.5	3.0	30	73	460	208	12	2,430	2,170	91	14	15	9.5			5.0	:
ember 1954	77.76	(SO ₄)	10.4	9.4	7.0	2.0		7.7	5.7	6.2	:	9.7	15	69	30	5.6	337	320	8.4	7.8	7.1	6.4			. 80	ì
llion, Septe	Bicar-	bonate (HCO ₃)	18	22	22	28	18	23	22	18	13	22	24	58	2,2	31	20	58	14	12	15	20	9	3 6	18	:
rts per mil	Potas-	sium (K)	1.6	1.6	1.9	2.1	, v.	2.1	2.0	2.0	1	1	1	1	;			45	;	:	2.6	2.6			2.5	:
Chemical analyses, in parts per million,	1	(Na)	7.6	8.0	æ.	9	9	6.7		4.3		1				9.6	1,340	1, 200	1	;	8, 1	5.1		9 6	. 4	}
ical analy	Mag-	nesium (Mg)	1.5	1.5	1.9	8:		1.4	1.2	1.2	∞.	2.6	5.6	32	14	1.9	191	143	1.7	1.6	1.5	2.1			- 0.1	1
Chem	Cal-	cium (Ca)		Ġ	6.2	o i	i i	re,	S.	4		7.					_	9		_						:
	į	(Fe)	0.39	. 28	8	. 15	. 17	8 .	. 18	. 13	1	:	1	1	;	. 17	2	97	1	;	. 28	. 29	23	3 8	5.2.	:
		(SiO ₂)	13	14	12	12	12	8.5	11	9.6	1	1	1	1	:	13	10	5.7	1	!	7.3	9.7	0		9.6	1
	Mean	discharge (cfs)			_									_			_									
		Date of collection	Apr. 1 (p. m.), 2-3, 4 (p. m.), 5-8, 10, 1955	Apr. 11 (a. m.), 12-14	May 24-31	June 1-10	June 11-20	June 21-30	July 1-10	July 11-20	July 21	July 22-23	July 24-26, 28	July 27, 29	July 30-31	Aug. 1-8	Aug. 9-10,	Aug. 11-12	Aug. 13	Aug. 14	Aug. 15-20	Aug. 21-30	Sept 1-10	Cont 11 90	Sept. 21-30	Average

PAMLICO RIVER BASIN--Continued TAR RIVER AT GRIMESLAND, N. C.--Continued

Temperature (°F) of water, water year October 1954 to September 1955

1		ļ																															١	1
September		75	74	74	74	16	73	72	73	11	11	10	13	11	15	12	7.5	75	74	14	7.	7.3	74	-2	-2	73	:	- :	11.	<u>-</u>	72	72	:	7.3
August		88	84	92	96	91	06	82	81	83	84	76	16	18	11	7.1	11	- 22	28	62	49	62	62	62	8 2	7.2	ğ	- 1	16	75	16	18	;	18
July		85	88	68	84	82	86	82	84	68	78	83	83	48	19	86	90	9 6	8	84	18	5	2 6	. 6	8	68	6	מפ	88	92	87	82	86	98
Sept. 30/ June		80	82	12	80	18	84	80	18	15	72	18	75	73	73	81	4	2 62	7.5	80	84	44	- 62	. 22	82	82	8	3 6	1.1	- 28	82	43	:.	49
afternoon to Sept.		:	:	-	:	:	;	;	;	:	1	;	:	:	:	:	:	:	:	;	:	;	;	;	80	80	80	; 8	98	20	98	80	82	
once daily in	p.m.	:	2	64	65	15	64	11	65	;	20	99	20	2	65	;		: :	: :	: :	: :		: :		:	:		:	<u> </u>	;	;	;	;	:
, once d	a, m.	63	- 29	88	;	65	90	63	65	:	65	67	88	89	65	;		;		;	: :		:	:	;	:		:	;	;	;	;	;	;
h 14,	p.m.	22	!	26	28	;	;	24	26	22	26	28	28	ł	22	28	9	9 6	3		63	9	3 15	3 8	3 2	8 8	. 4	3	:	22	26	9	!	:
March	a.m.	48	;	45	22	22	28	22	26	26	29	24	:	-	28	22		5 6	2 6	9 6	3 :	- 0		3 2	3	90	:	;	:	;	:	54	:	:
ry after	p. H.	44	:	;	;	:	:	42	;	;	40	:	;	40	43	40		:	:	: 5	45	u u	3		:	- 2	 !	; ;	7	23	:	;	;	:
ing and a	a.m.	9	:	;	20	;	;	;	43	45	45	45	:	;	40	45	•		. 4	2 5				2	 :	: :		:	<u> </u>	7	;	;	-	:
Twice-daily measurements in morning and afternoon to Apr.	p.m.	48	20	63	;		61	89	19	63	63	- 09	;	:	;	;		: 5	2 5	2	41		2	: :	9	4	: ;	Į:	42	42	43	42	40	;
January	a.m.	55	20	63	89	67	67		22	54	20		;	:	:	:	_	:	: 0	- 2	41		9 6	5	: 6	6 4	-	7.	-	41	:	:	38	:
neasur er	p. m.	20	20	21	20	21	4.7	48	848	48	46	44	41	42	40	40	-		1 6	9 4 4	4	•	2 6		2 5	2 6	; ;	7.	9	45	45	45	‡	44
e-daily me December	a.m.	52	20	49	49	49	49	45	45	49	44	42	41	41	41	39	-	9 9		-	40	-	2 5	2 4	3 6	3.2	-		39	39	4	45	45	43
Twice	si	:	29	26	26	22	- 22	20.00	22	22	54	22	28	22	22	25	9		2 2	0 0	26.5		3 8		2 2	3 12	-	_ 2 :		23	53	21	;	22
November	m. p.	 -	:	22	54	22	- 22	45		53	53	22	25	53	23	22	-	* "	2 11	3 9	200			2 2		. 4		-	- 12	22	22	20	-	54
-	H.	L	_		_	8		_		92			_			23					- 20		_	_		3 42		_	92				9	12
Octobe	a.m. p	76	_	9	- 92		- 62	-	- 22	4	- 22		4.	73	74	12		200	0.0		99			4 6	4 6	3 5	_	2	63	82	63	61	29	69
H	14	L	_		_					_								_						_						_	_		_	٠.
	Day	1		9	4	5.	•	7		6	10.	11	12	90				10	1.1	10	20		64	66	60	25		26	27	28.	29.	30.	31	Average

PAMLICO RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PAMLICO RIVER BASIN IN NORTH CAROLINA

		Color		31		20	ins,	5 NAMES		37		25 WWH 1	KIVEK		
		Нď		6.8		6.6 6.6		6.2		6.6		6.2 5.6		10.00.00.00 00.00.00 00.00.00	9.5
	Specific conduct-	ance (micro- mhos at 25°C)		68.0 90.3		71.6		46.8 68.9		49.4 78.9		56.7 73.6		127 105 648 648 810 205	701
	Hardness as CaCO,	Non- carbon- ate		00		01 1		0.0		-0		98		25 88 85 44	
	Hard as Ca	Calcium, mag- nesium		21 34		17 24		16		17 20		14 20		32 13 92 48	67
	Dissolved solids	(residue on evap- oration at 180°C)		70 a 63		69 a 47		51 a 54		46 a 58		54 a 51			
er 1955		(NO ₃)		0.9		0.1		1.2		0.9		0.3 9.			
Septembe		Fluoride (F)		0.1		0.0		0.0		0.0		0.0			
ber 1954 t	į	(C1)	~	3.8	J.E	6.0 4.8		8.8	Q	5.5		4.0 5.8	_	112 113 1155 210 115	5
Chemical analyses, in parts per million, water year October 1954 to September 1955		(SO ₄)	TAR RIVER NEAR TAR RIVER	4.7	SAPONY CREEK NEAR NASHVILLE	2.2	TAR RIVER NEAR NASHVILLE	3.1	FISHING CREEK NEAR ENFIELD	2.9	LARBOR O	5.4	TRANTERS CREEK AT LATHAM	118 12 20 20 29	=
llion, wate	Bicar-	bonate (HCO ₃)	ER NEAR	29	REEK NEA	82	ER NEAR	10 27	CREEK NE	13	TAR RIVER AT TARBORO	10	S CREEK	621	91
ırts per mi	Potas-	Sium (K)	TAR RIV	1.6	SAPONY C	1.3	TAR RIV	2.0	FISHING	2.1	TAR R	2.1	TRANTER		
yses, in pa	7	(Na)		4.4		3.9		5.5		5.8		4.9			
mical anal	Mag-	nesium (Mg)		1.9		2.3		1.0		1.3		0.9		8.0 112 3.9	*
Che	Cal-	cium (Ca)		5.2		5.8		4.4		5.2		4.1		116 117 113	5
	<u>.</u>	(Fe)		0.14		1.2		0.05		0.46		0.30			
	07170	(SiO ₂)		15		=		19		13		41			
	Discharge	(cfs)		50.1 29		32.4		2,830		620 137		3,360 1,560			tituents.
		Date of collection		May 3, 1955		Feb. 15, 1955		Feb. 15, 1955		Feb. 15, 1955		Feb. 16, 1955		Sept. 14, 1954 Sept. 30 Nov. 4 Nov. 30 Reb. 17, 1955	a Sum of determined constituents

WASHINGTON
NEAR
CREEK
TRANTERS

Sept. 30 Nov. 4 Nov. 30		76				41 39 46 47	279 231 454 370	1,870 1,580 2,350 2,600				648 530 980 890	614 498 942 851	6,040 5,100 8,960	4.7.7.	
Feb. 17, 1955		24	46			19 26	35	655				83 22	62	2,270	4.9	
					HERRING	BRUN NE	HERRING RUN NEAR WASHINGTON	NGTON								
30, 1954		`;	; ;			106	.6			1	1	82	٥١	237	4.7	
Nov. 4		2 8 4 48	. 4 . 4 . 4			10,4	23 23			1 1	: :	108	21 2	1.000	0.0	
0.		14	2.2			33	29			0.0	128	43	16	146	6.7	
Feb. 17		25	4.1			72	21	7 29		: :	; ;	79	800	253	0.6	
Aug. 31 19.9	12	1.1 1.6		4.2	3.1	. 0	7.9		0.0	ε.	a 41	6	7	64.3	6.4	70
					HERRIN	HERRING RUN AT	T WASHINGTON	GTON								
Sept. 14, 1954		;	:			16	890	6, 470				2, 130	2,070	17,700	7.1	
Sept. 30		, 6	906			8 5	365	2,680				900	851	8,090	0.0	
Nov. 30		124	376			12	773	5,390				1, 360	1, 210	15,300		
Feb. 17, 1955		16	27			24	6	400				150	130	1,470	9.9	
June 1		99	178			45	389	2,700				988	828	8,250	6.5	
					BAT	BATH CREEK AT BATH	AT BATH									
Sept. 14, 1954		-	L			16	871	6.470				2, 080	2,020	17,500	7.2	
Sept. 30		-	_			83	931	6,680				2, 180	2, 110	17, 700	7.4	
Nov. 4		199	602			98	1,300	9,000				2,970	2,900	23, 700	7.2	
Nov. 30		207	665 456			88	1,420	9,740				3,250	3, 180	24,700	0.6	
Time 1		161	499			63	1.060	7, 370				2,460	2, 410	19,600		

PAMLICO RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PAMLICO RIVER BASIN IN NORTH CAROLINA -- Continued

		Color															Ì
		Ħd		8.8.7.7.8	7.0		6.8	5.7	7.1		6.4 8.8	8.8	6.8		6.7		7.1
	Specific conduct-	ance (micro- mhos at 25°C)		13, 300 14, 800 25, 100 26, 400	18, 100		18,300	25, 100	21,400		11, 700	21,800	17, 800 18, 100		16, 500	25, 100	21, 500 21, 500
	co,	Non- carbon- ate		1,500 1,720 3,120 3,480	2,200		2,230	3,130	2,710		1,370	3,560	2, 160 2, 190		1,930	3,140	2,450
	Hardness as CaCO,	Calcium, mag- nesium		1, 540 1, 770 3, 190 3, 550	2,240		2, 290	3,200	2,770		1,400	3, 630	2, 210		1,980	3,200	2, 500
itinued	Dissolved solids	(residue on evap- oration at 180°C)															
955Con		Nitrate (NO ₃)															
Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	:	Fluoride (F)															
r 1954 to S		Chloride (C1)	ILLE	4, 690 5, 370 10, 000 10, 500	6, 630	AVEN	6,870	9,430	6,270	ILLE	4, 050 5, 640	8, 110 10, 500	6, 580 6, 730	AVEN	6,040	9,580	1, 100 7, 570 8, 070
rear Octobe		Sulfate (SO ₄)	PUNGO RIVER AT LEECHVILLE	656 752 1,350 1,520	954	PANTEGO CREEK AT BELHAVEN	948	1,370	1,180	PUNGO CREEK AT YEATSVILLE	598 790	1, 220 1, 560	973 947	PUNGO CREEK NEAR BELHAVEN	837	1,350	1,090
n, water	Bicar	bonate (HCO ₃)	RI VER A	88 88	54	GO CREEK	17 25	82	42.	CREEK A	41	63	61 57	CREEK N	83.	: 22 3	625
per millic	Potas-	sium (K)	PUNGO			PANTE				PUNGO				PUNGO			
s, in parts	:	Sodium (Na)															
al analyse	Mag	nesium (Mg)		644	459		: :	654	547		1 1	545 743	458		: :	647	516 548
Chemic	-le	cium (Ca)		214	140		: :	203	159	,	11	207	132 143		: :	214	151
		Fe)															
	į	Silica (SiO ₂)															
		Discharge (cfs)															
		Date of collection		Sept. 14, 1954 Sept. 30 Nov. 4 Nov. 4 Sept. 30	June 1		Sept. 14, 1954.	Nov. 4	Feb. 17, 1955		Sept. 14, 1954	Nov. 4 Nov. 30	Feb. 17, 1955		Sept. 14, 1954	Nov. 4	Feb. 17, 1955

NEUSE RIVER BASIN

NEUSE RIVER AT SMITHFIELD, N. C.

LOCATION .-- at bridge on U. S. Highway 70 in Smithfield, Johnston County, 1.4 miles upstream from Swift Creek, and 11.5 miles downstream from gaging station

DRAIMOR RRA.-1.201 square miles (approximately).

RROONG AMILABLE.-Chemical analyses: October 1994 to September 1955.

RROONG AMILABLE.-Chemical analyses: October 1954 to September 1955.

Mater temperatures: October 1954 to September 1955.

RATERIES: 1954-55.—Dissolved solids: Maximum, 154 ppm Oct. 1-10; minimum, 60 ppm Feb. 20-28.

Bardies: Maximum, 34 ppm Oct. 1-10; minimum daily, 44.4 micromhos Aug. 19.

Specific conductance: Maximum, 85 F July 27; minimum, 34 F Dec. 22.

Specific conductance: Maximum, 85 F July 27; minimum, 34 F Dec. 22.

RABARES: -Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of discharge for gaging station near Clayton, N. C. for water year October 1954 to September 1955 given in WSP 1383.

RABARES: -Records of discharge for gaging station except during periods of heavy local runoff.

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		_																							
	Oxygen	Fil- tered	5.2	:	:	:	4.8	4.6	:	5.0	5.6	_	8.	5.9	4.4	4.7	3,7	7.4	6.6	5,9	8,3	7.1	5.5	4.1	4.5
	Cons	Unfil- tered	5.2	:	:	:	4.8	2.0	;	6.0	7.2		7.3	7.2	5.8	6.1	5.1	:	ì	8.3	9.7	12	4.7	8.8	9.6
	(Color	12	;	1	1	22	19	;	14	38		32	32	∞	8	10	20	20	18	22	23	18	12	52
		Hd,	6.7	7.2	6.3	6.8	6.4	6.9	6.7	6.5	6.5		6.5	6.4	9.9	6.7	9.9	6.6	9.9	6.7	7.1	7.3	7.4	6.7	6.8
	Specific conduct-	(micro- mhos at 25°C)	303	267	90.2	257	158	133	201	196	140		105	106	92.6	143	127	8.8	68.6	81.7	85.7	19.9	116	107	106
	ess CO,	Non- carbon- ate	0	0	-	18	0	0	0	0	0		ഗ	ß	-	0	0	m	m	0	87	87	0	0	0
1955	Hardness as CaCO ₃	Calctum, mag- nestum	34	32	19	28	21	22	23	31	23		20	18	20	26	23	15	15	18	18	19	20	22	23
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids	on evap- oration at 180°C)	184	1	;	:	108	85	;	128	92		77	15	73	86	91	19	09	64	99	63	82	8	8
· 1954 to	Nitrate	(NO3)	6.9	1.3	1.5	2.0	4.5	5.3	6.1	5.9	8.3		2.1	2.2	2.1	2.8	3.4	1.1	1.3	1.3	1.0	∞.	1.6	8.7	3,5
October	Fluo-	ride (F)	0.2	:	;	1	7.	٦.	1	٦.	٦.		٥.	٥.	٥.	۰.	٥.	-	: -:	7:	7:	Ξ.	٥.	7.	=
ter year	Chlo-	CI)	46	21	8.0	29	18	=	58	22	18		12	12	 8:	11	14	8.9	2.8	80	8.0	7.2	14	9.5	9,2
illion, w	Sulfate	(°SO*)	6.2	15	4	12	8.5	7.1	11	11	7.6		10	10	8.0	8.2	9.5	9.1	8.9	8.6	8.6	8.0	7.3	6.6	5.9
arts per m	Bicar-	Donate (HCO ₃)	73	83	22	12	36	38	38	40	28		19	18	24	35	29	15	12	22	21	19	25	59	32
ses, in p	Po- tas-	sium (K)	5.0	;	:	:	3.8	3.5	;	4.0	2.8		1.5	1.9			2.0	1.6	1.6	7:	1.6	1.2	1.6	1.9	3.5
ical analys	Sodium	(Na)	45	1	;	;	20	15	1	25	18		=	10	8.8	17	14	9.9	6.7	9.3	8.7	8.3	14	11	97
Chem	Mag- ne-	Sium (Mg)	2,5	3.4	1.7	4.3	1.9	2.1	2.6	2.7	1.9		1.8	1.6	1.7	2.0	1.9	1.3	1.2	1.6	-1	1:3	1.7	1 8	1.8
	ਰੂੰ .	(Ca)	9.6	7.5	4.8	4.6	7.6	6.4	7.3	8.0	6.0		5.0	5.2	5.3	7.0	6.2	4.0	4.2	4.6	4.8	5.4	5.3	5.8	6.5
		(Fe)	0.01	;	;	1	8	. 15	:	\$	2.		8.	<u>\$</u>	. 16	2	. 12	60	43	8	8	8	8	.02	97
	Silica	(SiO ₂)	13	;	:	1		9.6	;	14	16		14	12	15	17	10		6.2	12	8.7	8,2	9.0	13	16
	Mean	discharge (cfs)	72								438		740												812
		Date of collection	Oct. 1-10, 1954	Oct. 11-15	Oct. 16	Oct. 17-20	Oct, 21-31	Nov. 1-5	Nov. 6-10	Nov. 11-20	Nov. 21-30		Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Feb. 11-19.	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-22, 24, 26-28	Mar. 23, 25, 29-31	Apr. 1-19.	Apr. 11-15

NEUSE RIVER BASIN -- Continued

NEUSE RIVER AT SMITHFIELD, N. C.--Continued

	ਚ	Fil- tered	7.5	81.0	ا بِهِ	5.8	-	80.	4.2		•	<u>۲</u>	;	;	~	٠.	4.0		. 7	9.	<u>د</u> .	7.1		6.1
	Oxygen	Unfil- I	12 7						8.6				;	-			7.4	_			_	_	+-	2
		L	10	- 1	_	-						_				2	2 4	- 	=	12	14	9, 5		œ'
	-	5	32	_	_	35		_	25								25					3 2	╀	28
	7	5 ,	6.6	6.5	9.6	7.3	7.5	0.7	6.9	7.6		-	6.6	7.3	6.9	7.2		:	7.3	7.2	7.1			_
	Specific conduct-	(micro- mhos at 25°C)	72.5 100	119	155	113	119	175	191	189	136	111	62.6	101	177	159	154	6.0	103	106	53.6	113		133
	ess CO ₃	Non- carbon- ate	80				0	0	0	0 0	> 0	>	0	0	0	0	-	>	0	0	~	0 0	,	-
Continued	Hardness as CaCO ₃	Calcium, mag- nesium	19 19	22	22	50	20	22	23	22	3 6	Ç4	11	20	21	28	7 7	71	21	21	13	21	:	22
Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	Dissolved solids (residue	on evap- oration at 180°C)	64 75	92	102	7.1	84	113	121	119	120	90	;	;	118	101	102	:	84	84	53	& &	8	06
to Septem	Nitrate	(NO ₃)	1.6	2.9	4.0	3.1			1.5										1.9	2.6	o.	4. 4		2.8
er 1954	Fluo-	(F)	0.1	٥.	٦. :	0.	;	0.	=:	-: •	-:-	τ.	1	٦:	٦.	=:	-: •	:	۲.	٦.	0.	-! -		0.1
ar Octob	Chlo-	(CI)	5.2 10	12	19	14	13	24	26	8 1	× 5	3	7.0	9.2	24	21	222	?	11	12	3.5	12		16
water ye	Sulfate	(so [*])	5.2	5.5	ຄຸ ແ ນ ເຕ	5.5	8.8	4.3	4.2	7.7	6.9 A	ř	4.3	3.6	4.5	5.0	9.4	- F	4.8		8.9	 		7.0
r million,	Bicar-	(HCO ₃)	20 27	35	251	26	36	33	49	24.2	3 3	10	20	29	42	40	4. 0	91	22	26	14	32	3	32
parts pe	Po- tas-	sium (K)	1.5	2.1	9 0	2.0	2,3		2.6				1.8	2.4	3.1	3.0	o 4	ř.		2.4		2.0		2,4
nalyses, in	Sodium	(Na)	5.7	13	25	12	14	22	28	4.0	29	1	6.3	=======================================	22	20	200		10	11	3.5	12		15
nical a	Mag- ne-	Sium (Mg)	1.5	1.9	1.7	1.3	1.2	2.2	1.4	2.2	7.7	£.5	1.4	1.7	1.5	2.2	1.6	?.	1.5	1.5	-	9.6	:	1.8
Cher	Cal-	(Ca)	5.1	60.0	. c	5.8	6.0	7.1	8.9		4.0	9	4.4	5.2	8.4	7.4			5.9	0.9	4.0	6.0	;	6.0
	Iron	(Fe)	0.07	.13	5 :	8.	.03	. 28	.03	8	3,6	3.	1	.03	Ξ.	40	8.8	8	. 55	. 23	Ξ	4.5		0.11
	Silica	(SiO ₂)	4 4		e, C	13	15	11	12	9:	2 :	71	8.1	=	13	16	13	•	15		6.3	16	3	13
		(cfs)	2,630 856	339	276	640	230	176	188	172	139		2,600						456	1,840	6,400	434 534	1	916
		Date of confection	Apr. 16-20, 1955	May 1-10	May 11-20	May 23-31	June 1-5	June 6-10	June 11-20	June 21-30	Tuly 1-10	am's 11-12, 11-20	July 15-16	July 21, 23, 30-31	July 22, 24-29	Aug. 1-10	Aug. 11-14, 16	meg. 10, 11-20	Aug. 26-31	Sept. 1, 6, 8-10	Sept. 2-5, 7	Sept. 11-20		Average

a includes equivalent of 17 parts per million of carbonate $(\mathsf{CO_s})$.

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NEUSE RIVER BASIN--Continued NEUSE RIVER AT SMITHFIELD, N. C.--Continued

Temperature (°F) of water, water year October 1954 to September 1955 __Once-daily measurement at 7:45 a, m__/

			r ——		r-uany m				·			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	52	39	49		50	54	67	75	76	78	74
2	72	50	40	48		52	54	65	70	78	80	74
3	72	50	38	38		51	54	67	69	79	81	74
4	74	48	37	39		54	56	65	70	80	80	72
5	74	50	37	46		55	56	68	73	81	79	72
					ļ	-			, , ,			'-
6	72	58	37	42		56	56	68	73	80	78	72
7	70	54	37	42		55	54	68	77	83	80	73
8	68	50	35	40		52	56	70	77	80	81	74
9	65	48	37	36		51	56	70	74	80	82	75
10		48	37	38		55	58	70	76	79	81	76
							ł					
11	66	56	37	37	41	53	62	72	70	81	81	77
12	74	58	39	36	39	59	59	72	68	80	79	78
13	74	58	37	38	37	60	62	72	69	79	78	74
14	73	58	38	38	40	59	65	74	72	80	78	70
15	73	58	38	42	40	57	65	74	72	80	79	74
			l	İ	l	l	1				1	
16	7,0	60	38	39	42	58	62	75	72	81	78	71
17	64	62	38	38	44	58	64	60	72	79	78	71
18	58	60	39	38		58	63	68	72	79	72	71
19	56	60	39	38	43	54	65	69	73	80	73	72
20	53	60	37	36	44	54	69	73	74	80		72
		1		1	1							1
21		57	38		46	54	70	75	75	79		72
22		56	34		47	55	70	75	75	81	~-	72
23		52	37		47	51	70	75	82	81		73
24		54	39		48	52	70		80	83		75
25	58	50	39		50	55	70	71	78	81		74
				1		_			İ			1
26	56	50	36		52	56	68	72	78	83	73	71
27	58	48	42		50	52	65	73	74	85	79	71
28	56	46	45		48	52	62	73	73	84	78	72
29	55	46	48			52	62	71	74	84	72	73
30	58	45	45			49	63	70	74	80	76	73
31	55		42			50		75		79	76	
Aver-	65	53	39			54	62	71	74	80	78	m2
age		""				94	02	7.1	/4	00	18	73
									L			

NEUSE RIVER BASIN -- Continued

NEUSE RIVER NEAR GOLDSBORO, N. C.

LOCATION. --At gaging station at highway bridge, 0.2 mile upstream from Stony Creek, 1.5 miles downstream from Atlantic Coast Line Railroad bridge, 3 miles south of Goldsboro, Wayne County, 4.3 miles downstream from Little River, and at mile 135.
DRAINGE ARRA.--2, 390 square mailes (approximately)
RECORDS ANAILMALE, --Chemical analyses: October 1948 to September 1954 to September 1955.
RECORDS ANAILMALE, --Chemical analyses: October 1954 to September 1955 given in WSP 1383.

		Color	83	27	30	21	;	90	22	30	25	20	35	9	;	20
		Hq	6.1	8.8	6.1	6.4	6.5	5.9	6.4	6.3	7.2	7.2	6.9	6.7	6.2	5.9
	Specific conduct-	ance (micro- mhos at 25°C)	86.7	128	91.7	100	80.6	59.0	73.9	71.0	127	127	76.3	6.69	48.0	64.2
	ле <i>вв</i> СО ₃	im, Non- g- carbon- im ate	2	•	6	_	4	9	60	0	•	0	0	0	0	9
	Hardness as CaCO _s	Calcium, mag- nesium	18	23	19	11	15	13	14	14	20	21	13	11	=	91
	Dissolved solids	(residue on evap- oration at 180°C)	29	98	8	73	49	53	19	28	83	62	65	99	:	69
er 1955		Nitrate (NO ₃)	2.3	1.2	1.5	۲.	s.	œ.	1.0	1.4	6.	6.	1.4	.7	1	1.1
to Septemb		Fluoride (F)	0.1	0.	0.	٥.	:	0.	-:	-:	-	•	0.	-:	!	٥
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride (C1)	8.2	13	9.6	12	0.6	5.8	7.8	0.9	91	14	7.0	7.0	3.8	6.5
ter year Oc	_	80£)	9.1	10	12	10	12	10	8.8	9.0	4.1	8.4	5.6	5.1	3.5	3.9
nillion, wa	Bicar-	bonate (HCO ₃)	19	32	13	19	13	89	14	17	8	35	17	16	14	91
parts per 1	Potas-	Sium (K)	3.1	3.2	1.9	1.6	1	2.0	1.6	1.4	2.3	2.0	5.0	2.0	!	2.2
alyses, in		(Na)	8.8	14	8.5	11	;	5.6	8.0	6.2	12	15	8.0	8.8	;	5.0
mical an	Mag-	nesium (Mg)	1.5	1.8	2.2	1.9	1.5	∞.	1.2	1.1	1.6	1 8	1.1		₩.	1.5
Che	Cal-	clum (Ca)	4.7	6.2	4.0	3.8	3.6	8.8	8.8	9.0	5.4	5.5	3.8	3.3	3.1	4.0
		(Fe)	0.03	1.	.02	1.	;	90	.12	8	.07	10.	.16	.17	;	.30
		(SiO ₂)	7.9	15	91	7.1	;	7.1	10	5.5	=	6.6	9.3	9.7	1	=
	Mean	discharge (cfs)	860	263	1,370	1,030	1,950	5,580	2, 220	3, 760	208	315	2,110	2,510	22, 500	5,300
		Date of collection	Oct. 21, 1954	Nov. 16	Dec. 15	Jan. 15, 1955	Feb. 1	Feb. 15	Mar. 15	Apr. 18	May 14	June 15	July 14	Aug. 15	Sept. 9	Sept. 14

NEUSE RIVER BASIN--Continued

NEUSE RIVER AT KINSTON, N. C.

on State Highway 11, 600 feet upstream from gaging station at Kinston, Lenoir County. LOCATION. --At bridge on State Highway 1: DRAINAGE AREA. --2,690 square miles. RECORDS AVAILABLE. --Chemical analyses:

		BODE KI	7.12		Di																			-
		Color	91	88	11	32	37	23	23	22	21	33	\$	42	50	31	88	45	14	16	2	1 3	8 8	2
		Hd	6.4	6.4	6.3	6.1	9.1	6.3	6.2	6.3	6.5	9.9	9.9	6.3	8.8	8.8	6.7	6.4	9.9	6.5	90.0	0 1		6.4
	Specific conduct-	ance (micro- mhos at 25°C)	105	108	89.2	90.4	75.4	86.2	82.9	80.5	83.2	87.9	6.68	91.6	81.8	113	114	109	133	122	929	071	8.6	e. 66
	ness CO ₃	Non- carbon- ate	7	9		~	S	7	2	9	ß		2	4	7	0	0	0	0	0	6	> 1	0 (5
	Hardness as CaCO ₃	Calcium, mag- nesium	21	20	18	17	17	18	18	18	18	17	17	20	21	21	19	23	22	20	8 2	17	13	77
	Dissolved solids	(residue on evap- oration at 180°C)	92	22	92	74	49	67	70	7	67	92	67	12	73	98	22	83	83	78	86	1 1	2 1	- 77
		Nitrate (NO ₃)	8.2	8.8	1.8	1.9	1.0	4.	1.3	1.3	1.5	2.6	2.3	8. 8.	2.4	2.2	2.3	۲,	2.8	2.5	4. 8.	l '	٠.	1.2
ber 1955		Fluoride (F)	0.1	0.	7.	=:	0.	۰.	٥.	=:	0.	Ξ.	0.	۲.	0	0.	۳.	-:	63	2	e.:	! '	0.	o.
Chemical analyses, in parts per million, January to September 1955		Chloride (C1)	11	12	11	9.2	6.5	0.8	8.0	7.5	4.8	9.5	10	8.5	9.5	13	14	11	15	16	13	47	7.2	8.0
ion, Janua		Solfiate (SO ₂)	13	12	13	13	=	14	=	12	11	9.4	7.8	8.9	8	7.4	8.8	4.8	7.0	5.4	6.1		5.4	6.9
ts per mill	Bicar.	bonate (HCO ₃)	11	11	15	12	14	13	16	14	16	19	18	20	23	27	78	78	36	27	F 8	97	110	78
es, in par	Potas-	Sium (K)	1.8	2.1	2.1	1.3	2.5	2.1	۳.	1.7	1.6	1.4	2.1	1.9	2.1	2.1	2.0	2.5	2.7	2.3	8.	;	2.1	2.3
nical analys	;	(Na)	10	11	9.3	8.5	2.0	8.5	7.5	7.3	1.3	8.8	9.2	4.9	8.6	120	13	10	15	15	13	!	7.7	8.6
Chen	Mag-	nestum (Mg)	1.7	1.7	1.7	1.7	1.4	1.5	1.5	1.7	1.4	1.4	1.7	1.6	1.8	8	1.7	1.8	1.5	1.5	6.	1:1		1.3
	Cal-	chum (Ca)			4.8				8.	4.4	4.9	4.4	4.2	5.4	5.2	5.7	4.9	6.3	7.8	5.6	8.8	6.4	4.0	6.3
		Fe)	0.05	. 12	9.	.10	.10	8	26	.30	8	.15	.19	.12	8	.40	116	. 19	10.	80.	6	!	.16	.18
	į	(SiO ₂)	8.7	13	13	11	7.9	8.8	10	7.9	=	10	7.3	10	13	=	9.0	11	6.7	7.1	8.4	!	6.8	14
	Mean	discharge (cfs)	828					2,720	2,580	2,710	2,850	1,230	1,810	2,330						496	305	8	2,600	139
		Date of collection	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb, 11-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31	Apr. 1-10	Apr. 11-20	Apr. 21-30	May 1-10	May 11-20	May 21-31	June 1-10	June 11-20	June 21-30	July 1-10	July 11-14	July 15-20	July 21-31

NEUSE RIVER BASIN -- Continued

NEUSE RIVER AT KINSTON, N. C.--Continued

Chemical analyses, in parts per million, January to September 1955 -- Continued

	Mean			Cal-	Mag-		Potas-	Bicar			i		Dissolved	Hardness as CaCO,		Specific conduct-		
Date of collection	discharge (cfs)	(SiO ₂)	(Fe)	Cium (Ca)	nesium (Mg)	(Na)	stum (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calctum, mag- nestum	Non- carbon- ate	ance (micro- mhos at 25°C)	Hď	Color
Aug. 1-10, 1955	702	9.7	0.17	5.1	1.5	=	2.4	23	6.5	13	0.0	1.5	77	19	0	104	9.9	35
Aug. 11-20	3,270	8.1	.23	4.6	1:1	8.9	2.2	14	7.7	8.0	٥.	2.2	77	16	c	80.2	9.9	35
Aug. 21-31	13,400	4.5	16	5.9	1.0	3.7	3.0	18	7.0	4.2	٥.	2.6	a 75	13	4	68.4	6.5	160
Sept. 1-10	11,300	8.0	.14	5.2	1.7	4.4	5.9	12	5.3	5.2	0.	1.9	73	20	60	8.02	9.9	100
Sept. 11-20	12,100	8.2	.83	9.6	1.4	2.0	3.5	8	13	4.0	•	1.7	08	30	က	0.68	6.5	110
Sept. 21-30	8,410	8.8	.32	5.2	1.7	5.4	2.4	19	7.6	7.0	0.	2.1	16	20	4	75.0	6.6	100
Average	3,050	9.5	0.16	5.4	1.5	9.0	2.1	21	8.8	9.6	0.1	2.0	75	20	3	0.96	1	45
a Organic matter present; sum of minera	it: sum of mine	_	constituents 44 parts per million	t parts pe	r million													

NEUSE RIVER BASIN -- Continued

NEUSE RIVER AT KINSTON, N. C.--Continued

Temperature (°F) of water, January to September 1955

					ce-daily	measurer	nent at 3 p	o.m <u>./</u>				
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				54	45	58	62	70	80	85	88	80
2				58	55	56	60	68	78	90	89	81
3 4				57	44	58	64	69	78	90	86	76
4		ì	1	68	42	56	64	72	80	89	86	79
5				51	48	60	65	75	77	91	85	75
6				63	54	55	62	78	87	89	87	77
7	ł	į.		52	54	58	64	72	82	90	88	77
8				54	49	58	60	75	82	79	89	76
9	1	1	}	54	48	58	64	78	71	83	89	79
10				47	50	60	65	70	73	91	86	82
11	\			45	49	62	65	79	78	88	68	77
12				48	45	60	68	80	82	88	74	81
13				45	42	61	72	72	80	82	79	72
14	!	1	į.	45	36	58	70	76	85	85	82	74
15	1			49	45	62	71	76	82	82	84	83
16		}	İ	45	48	62	71	75	80	83	83	75
17	1	i		39	50	62	72	78	85	85	76	78
18		l		36		60	73	75	78	86	82	
19	1	ļ	1	39	45	58	72	79	80	82	85	75
20		l		45	50	57	72	82	82	84	84	75
21		ļ		45	48	60	72	82	85	85	82	75
22			i	48	55	62	73	79	84	89	83	76
23		l		42	55	58	78	75	89	84	81	75
24	ļ	1	1	42	56	62	75	79	82	82	80	74
25	ļ	J		44	48	60	71	81	85	82	75	76
26				45	51	64	70	83	78	82	79	75
27	1		ſ	46	55	55	68	83	82	87	88	
28				54	58	54	69	85	81	90	84	78
29	Į.	l		42		58	72	83	80	89	89	74
30	1	1		42		52	75	82	85		84	74
31				38		60		80			86	
Aver-	1			48	49	59	69	77	81	86	83	77
age		<u> </u>	l									_ <u>··</u> _

NEUSE RIVER BASIN -- Continued

NEUSE RIVER NEAR FORT BARNWELL, N. C.

LOCATION. .-At county bridge off State Highway 55 between Fort Barnwell and Vanceboro, Craven County, N. C.

No discharge records available for this station.

		Color	.		12	; ;	26	13	12	18 27	22	23	22	9 9	32	21	24	42	3,4	36	15
		HZ.	0.7	× 69	6.5	4.0	4.	6.9	8.6	0 2	6.7			0.00			8.8		6.0	6.4	8.2
	Specific conduct-	ance (micro- mhos at 25°C)	153	178	187	357	128	154	147	108	109	101	112	96 9	76.0	87.8	88.6	85.7	1001	89.7	88.8
	less CO,	Non- carbon- ate	o (20	0	a c	· =	0	0	N 60	· œ	-	ω ;	2 =	00	10	-	•	- 6	63	-
	Hardness as CaCO,	Calcium, mag- nesium	82	154	8	12	25	31	22.5	7 S	22	22	23	3 2	92	62	18	= :	22	82	11
	Dissolved solids	(residue on evap- oration at 180°C)	76	101	120	: :	82	85	7.8	78	8	11	81	22	83	89	99	8 6	2.22	88	78
2		Nitrate (NO ₃)		2.7			4.4	3.1	8.6	20 67 20 67	1.8	2.4	2.6	0.0	æ.	1.1	æ,	67 - 60 -	1.5	1.8	1.8
August 195		Fluoride (F)	0.0	9.0	=	: :	0.	7	-! (N 63	~	Ξ.	۰,	? -	•	7	0.	·		7	₹
September 1954 to August 1955		(C1)	17	20.0	24	0.0	14	16	92 :	2 =	12	=	=:	2 6	7.2	8.2	7.8		9 6	80.	9.5
		(80°)	6.6	- 12 - 4.	12	0	. 2	9.2	9:	2 52	12	17	52 !	===	12	14	13	2:	==	9.6	8.8
per milli	Bicar-	bonate (HCO ₃)	42	168	4	a 204	88	4	33	2 5	1.1	18	2:	4 2	2	=	15	7:	‡ <u>6</u>	8	19
s, in parts	Potas-	slum (K)	3.3	. e	3.8	; ;	3.6	4.0	8.9	89 69 89 69	2.4	1.8	8.7	9	2.0	ĸ.	1.8	2.	- 6	9.	1.8
Chemical analyses, in parts per million,	;	Sodium (Na)	18	21.3	22	1 1	13	18	5	2 2	2	9.6	01		2.0	7.5	8.0	e	2 -	8.8	9.8
Chemi	Mag-	nestum (Mg)	2.1	7.5	2.2	2.5	1.8	1.7		 	1.8	1.7	8:	 	1.3	4.	1.6			۰.	1.0
	Cal-	ctum (Ca)	7.9	8,0	8.4		. 60	9.6	8.8	5.6	6.0	9.0	6.4	2 6	£.3	7.0	5.0		20.5	8.2	5.1
		(Fe)	0.04	8.8	.02	1 1	Ŗ.	.10	8.3	5.8	2	8	2.5	3 8	8	9.	20.	. 6	282	2	.43
		(SiO ₂)	5.7	6.2	5.4	: :	9.2	12	13	12	9.6	7.9	2 5	2 5	8.1	20	=	œ c		8.8	14
	Mean	discharge (cfs)																			
		Date of collection	Sept. 23-25, 28-30, 1954	Sept. 26-27.	Oct. 9-11, 13-14, 16-21.	Oct. 12, 15	Oct. 24-31, Nov. 1-4	Nov. 5-8	Nov. 19-30	Dec. 1-10	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31 Feb. 1-10	Feb. 11-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Apr. 1-10	Apr. 11-20	Apr. 21-30

a Includes equivalent of 8 parts per million of carbonate (CO₂).

24 32 32	888	: 8	: 88	8 8	110	31
4.6.8	6.4.6	 	6.9	6 4 4	6.1 5.0	:
102 122 121	108 125 117	260 109	12 6 70 2	89.3 94.1	80.7 175	129
800	800	13	0 8	0 %	10 16	2
22.22	22 22	88 12 87	21 15	8 8	19	30
08 88	82 78 78	75		74 69	68 108	83
1.0	2.4.2	1.9	1.2	7.5 7.5 7.5	20.4 20.4	2.5
1.0.0	0'4'-	"?	; 9.	. o	. o	0.1
13.8	222	53	16 6.0	9.5	7.0	13
80 80 80 4. 4. 4.	8.5.5 8.5.5	17 5.0	6.3	8.1 7.3	11 01	10
31 32 32 32	222	31 28 31	8 19 19	72 18	4 4	32
4.4	4.8.6	1.5	2.2	2 2	5.7	2.4
9.8 13	12 20	: =	. 9 . 8	0.8	5.4	11
2 5 5 5	0.1.1	1.5	1.2	1.4	4:1.	1.6
5.5.5	6.6.2	8 9 0.0	3.6	5.7	4.0	9.2
0.41	.05 .10	1 7	: 8	.38	e 4	0.12
14 10 6.3	6.8 6.8	7.4	1.6	9.5	7.7	9.2
		_	-			
May 1-10, 1955 May 11-20 May 21-31	June 1-10. June 11-20. June 21-26, 28-30.	July 1-10	July 11-14	July 21-31	Aug. 11-20	Average

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR FORT BARNWELL, N. C.--Continued

Temperature (F°) of water, October 1954 to August 1955 Once-daily measurement at 2 p.m. 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	58	49	52	43	49	58	71	86	82	79	
2	82	59	48	54	44	54	59	73	86	82	81	1
3	82	55	48	52	42	51	60	69	84	87	81	1
4	84	52	45	55	41	52	63	71	83	8€	84	1
5	85	53	47	52	40	50	62	72	80	87	85	
6	85	50	43	55	43	51	62	73	83	86	86	1
7	75	50	40	51	46	48	64	74	82	81	86	1
8	72	55	39	48	46	52	62	72	82	79	85	1
9	75		43	49	48	53	64	73	77	80	83	}
10	74		43	47	47	50	62	81	78	85	80	
11	78		42	45	43	49	60	82	80	84	78	
12	80		41	44		50	66	74	80	84	75	
13	80		41	32	41	51	69	76	79	80	72	
14	76		43	39	41	49	66	78	80	81	75	1
15	78		43	42	42	52	68		78	79	77	
16	76	'	42	43	43	46	67			80	74	
17	70		44	42	44	44	69	76	80	83	71	i
18	65		45	44	43	46	78	71	78	83	72	l
19	65	65	44	39	44	45		80	78	84	76	1
20	63	66	41			47	79	81	80	80	75	
21	62	64	38	40	44	49	78	82	84	83	76	
22	61	60	39	41	50	55	79	77	85	8.1	76	1
23	60	55	40	42	50	49	72	82	83	-78	74	1
24	64	54	48		53	50	70	80	82	8/3	75	ł
25	64	54	43	41	50	52	74	83	84	8:3	73	
26	66	52	44		52	49	73	84	80	87		}
27	68	50	45	44	51	47	72	86	80	83		1
28	66	51	48		50	42	72	85	81	83		
29	68	54	57	40		43	70	83	81	8,		1
30	62	50	55	40		43	69	80	83	8.5		1
31	61		54	40				82		87		<u> </u>
ver-	72		45	45	45	49	68	78	81	87	78	

NEUSE RIVER BASIN -- Continued

NEUSE RIVER NEAR (COWEN LANDING) VANCEBORO, N. C.

LOCATION.—At Cowen Landing about 6 miles southeast of Vanceboro, Craven County, N. C. RECORDS AAILABLE.—Chemical analyses: September 1954 to September 1954.
Water temperatures: October 1954 to September 1955.
Water temperatures: October 1955 and the september 1955.
EXTREMES, 1954-55.—Dissolved solids: Maximum, 6,670 ppm Oct. 15 (p.m.); minimum, 64 ppm Apr. 11-20.
Bardness: Maximum, 1250 ppm Maily, 12 (p.m.), minimum, 12 ppm July 16 (p.m.), 17-20.
Bardness: Maximum daily, 12,900 micromhos Aug. 12 (p.m.); minimum, 35 F Jan. 21 (a.m.).
Water temperatures: Maximum 48 F Aug. 8 (a.m.), 92 F July 28 (p.m.); minimum, 35 F Jan. 21 (a.m.).
Water temperatures: Maximum 60 F Aug. 8 (a.m.), 92 F July 28 (p.m.); minimum, 35 F Jan. 21 (a.m.).
REMARKS.—Samples collected twice daily (8 a.m. and 6 p.m.). Samples collected in morning and afternion were composited unless otherwise noted.
Oct. 120 F Septific conductance of twice daily 8 annia and 6 p.m.). Oct. No discharge records available for this station.

1		<u> </u>			,																			
		Color	80		24		11	!		16	_	:			: 4			- 2	_				53	_
		на	7.1	7.1	, co	6.7	9.9	7.2	4.	7.4	7.5	9.9	_	9 0	6 6		0 0		~	9.9	6.7	6.6	7.7	
	Specific conduct-	ance (micro- mhos at 25°C)	154	158	1,310	308	10,000	1,520	1,010	534	263	182	;	141	151	:	243	154	153	155	150	149	109	90
	ess CO ₃	Non- carbon- ate	0	0	80	~	1, 130	128	78	30	0	88	•	٠,	C &		2	- 0	۰ د	0	0	ıc	8	22
	Hardness as CaCO,	Calcium, mag- nesium	28	31	31	44	1,170	162	112	99	38	113		218	8 8	: 8	8 8	28.6	28	26	5 9	3,6	22.5	- 3
	Dissolved solids	(residue on evap- oration at 180°C)	94	96	112	:	6,670	1	541	306	191	1	į	104	1 6		2 2	- G	9	95	;	76	83	
55		(NO ₃)	7.0	1.0	4.1.	:	1.1	1	2.2	1.0	2.1	;		4. 3.	5	,	20.0	0 00	8	2.2	1	8.8	2.1	7.7
ptember 19	:	Fluoride (F)	0.0	o,	. vi	;	;	1	1	2.	;	:	,	?	¦ °	•	٠.			. 0	1	-:	2,0	z.
September 1954 to September 1955	:	Chloride (C1)	11	18	250 24	28	3,450	410	250	120	45	33	,	2 :	8 8	: ;	916	88	2 =	8	18	8	= :	11
, September	:	Sulfate (SO,)	11	13	3 g	17	465	142	44	26	15	•	;	2;	- 1-	;	:	15	?=	12	9	12	. 13	15
er million	Bicar-	bonate (HCO ₃)	45	46	2 6	51	26	42	42	4	48	31		88 8	8 8		200	8 8	42	25	33	26	91	16
Chemical analyses, in parts per million,	Potas-	sium (K)	3.1	3.5	3.4 8.4	:	20	;	4.9	5.3	4.0	;	,	3. 3.	, ec		0,0	, o	. 4	. 60	1	2.9	2.3	2.0
analyses,	;	(Na)	18	119	204	!	1,940	!	146	76	32	!	-	1.3	. 6	:	4.	2 1 2	. «	9 2	;	14	10	9.2
Chemical	Мад-	nesium (Mg)	1.0	2.2	2.3	4.6	239	33	16	7.3	4.1	24	,		4.0		- u	9 6			2.4	2.1	1.7	F. 9
	Cal-	cium (Ca)	9.7	8.8	8 .7	10	92	=	18	15	8.4	6.4		9.0	9		9 10	. 4	. ~	9.2	6.4	7.0	5.6	9
	,	(Fe)	0.04	8	.03	:	01.	:	9.	80.	8	;	;	9	9		3.5	5.8	: 8	8	1	.02	8.	- 3.
	į	(SiO ₂)	2.8	3.0	4.4 4.4	;	5.4	ŀ	5.4	6.3	5.8	!	,	ه . ی	8.7		× •	2 8	2	2 ==	:	12	=:	12
	Mean	discharge (cfs)																						
		Date of collection	Sept. 23-30, 1954 Oct. 1-6, 8 (a.m.),	9 (a.m.)	Oct. 9 (p.m.), 10-14.	Oct. 15 (a.m.)	Oct. 15 (p.m.) a	Oct. 16 (a.m.) "	Oct. 16 (p.m.),17 (p.m.)	Oct. 17 (a.m.), 18	Oct. 19-22	Oct. 23 (a.m.)	Oct., 23 (p.m.), 24-27,	28 (a.m.)	Oct. 29-31		Nov. 1-5	Nov 11-16	Nov 17-20	Nov. 21-28	Nov. 29 (a.m.)	Dec. 4 (p.m.), 7-10	Dec. 16-20	Dec. 21-31

a Sample was not included in the mathematical average because of abnormal condition of the river due to hurricanes.

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (COWEN LANDING) VANCEBORO, N. C.--Continued

			,					
	Color	2882288	2088898	528888	25 26 50 1 50 1	31	81;	90 100 160
	Нď	8 8 8 8 8 8 8 7 8 4 8 8	8.99 4.7.89 6.99 7.99	6.6 6.6 6.6 6.6 7.7 7.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8	8. 8. 8. 8. 8. 4. 8. 6. 8. 8.	8,8	7.6 6.2 6.1	4. 8. 2.
	Specific conduct- ance (micro- mhos at 25°C)	102 120 119 102 86.4	86.7.7 88.8 86.4 98.5 2.2 4.3	98.8 109 114 103 112	102 120 76.6 85.6 99.2	2,610	511 12,700 995	151 85.3 81.7
	CO, Non- carbon- ate	8811108	® 10 10 4 11 11	140410	000000	252	31 1,510 78	14
	Hardness as CaCO, Calcium, Nomage carb	23 26 28 12 17 19	20 21 20 18	25 22 22 24 25 25 25 25 25 25 25 25 25 25 25 25 25	21 12 19 80 80 80	273	1, 550 1, 550 95	27 20 21
	Dissolved solids (residue on evaporation at 180°C)	882 884 16 16 70	72 77 70 81 84	80 18 17 77 78	77 78 69 71 70	; ;	111	73 b 83
ontinued	Nitrate (NO ₂)	2.1. 6.1. 8.5. 8.5. 8.5.	2.2 2.2 2.2 3.2 4.6 6.1 1.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	0.11.9 6.11.9 6.14.85.1	8. 1.9 1.2 1.7	2.0	2.1	4. 1.9
r 1955C	Fluoride (F)	0.1.1.0.0.0	644466	000111	146661	다. ;	911	o o o
Chemical analyses, in parts per million, September 1854 to September 1955Continued	Chloride (C1)	12 13 12 10 10 7.8	88.8 8.5 10 10 8.3	10 11 11 12 13	11 13 7.2 7.2 9.8	760	4, 570 218	23 9.2 7.2
ember 1954	Sulfate (SO4)	41 16 13 13 13	12 12 9.5 11 11 7.7	5.1.8.1.8.1.1.4.4.	7.0 5.6 6.6 7.3	109	844 37	12 8.7 7.8
llon, Sept	Bicar- bonate (HCO ₃)	20 20 13 13 13 13 13	119 20 20 20 20 20 20 20	288282	25 29 21 25 26 26	25 25	16 21 21	16 15 19
ts per mil	Potas- slum (K)	0.11.11.00	6.2446.	2.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	999999 941991	15	3.7	2.2 2.0 2.8
ses, in par	Sodium (Na)	10 11 10 10 8.5	2000-	9 11 12 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15	8 2 2 7 7 2 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	415	£‡ ¦;	14 8.5 5.2
ical analys	Mag- nesium (Mg)	6. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	8.4.5.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E	2.0 2.0 2.0 3.0 8.0 8.0 8.0 8.0	44. 44. 44. 44. 44. 44. 44. 44. 44. 44.	48	309 15	1.9
Chem	Cal- chm (Ca)	8.4.8.8.8.8.	0.40.00 0.00.40	8. 8. 8. 8. 8. 5.	4.2.4.0 4.0.4.0 4.0.4.0	30	====	6.4
	Iron (Fe)	0.09 20.05 71.11	119 00 109 113 08	25: 119 20: 80: 40:	33 22 1	.03 1	811	.24
	Suica (SiO ₂)	11 12 13 11 8.1 8.8	8.8 13 9.5 11 9.5	21 9.9 8.5 7.5 8.3 4.0	4.2.8.8.1.	7.6	re:	5.8 7.2
	Mean discharge (cfs)							
	Date of collection	Jan. 1-10, 1956 Jan. 11-20 Jan. 21-21 Jan. 21-10 Feb. 11-19 Feb. 20-28	Mar. 1-10 Mar. 11-20 Mar. 21-31 Apr. 1-10 Apr. 11-20 Apr. 21-30	May 1-10 May 11-20 May 21-31 June 11-20 June 21-30	July 1-10 July 11-15, 16 (a.m.) July 11-15, 16 (m.), 17-20 July 21-31 Aug. 1-19, 10 (a.m.) Aug. 10 (p.m.)	Aug. 11 (a.m.), 13 (a.m.) a	Aug. 12 (a.m.), 14 (a.m.) a Aug. 12 (p.m.) a Aug. 13 (p.m.) a	Aug. 14 (p.m.), 15, 16 (a.m.), 17 (a.m.) Aug. 16 (p.m.), 17 (p.m.), 18-20 Aug. 21-31

a Sample was not included in the mathematical average because of abnormal condition of the river due to hurricanes. b Organic matter present; sum of mineral constituents 50 parts per million.

Sept. 1-10, 1955	 7.7	. 47	7.3	1.7	5.1	3.0	24	9.2	6.5	0.	9.0	89	92	S.	83.3		180
Sept. 11-20	<u>۔</u> چ		6.5	1.5	4.4	3.4	23	7.9	0.9	0.	9.	c 83	22	m	74.7	6.1	220
Sept. 21-30	5.4	97	4.6	1.4	3.5	8.	18	5.8	4.5	0	1.3	d 72	17	7	63.7		220
Average	8.4	0.14	7.2	2.8	17	2.7	27	12	27	0.0	1.8	103	30	6	166	:	45

c Organic matter present; sum of mineral constituents 49 parts per million. d Organic matter present; sum of mineral constituents 39 parts per million.

7.9

September

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (COWEN LANDING) VANCEBORO, N. C.--Continued

	nst	p.m.	88	; ;	8 8	98	3	68	4.	06	88	6	28	22	22	80	90	24	2.0	80	85	80	82	80	4	4	75	18	43	48	80	8	3
	August	a.m.	82	98	8 8	8 8	3	85	8	66 4 6	8 2	78	7.	92	200	82	94	2 %	2 2	12	84	78	80	82	82	78	92	75	92	82	92	8	ě
	у	p.m.	80	83	82.	5 2	5	82	4.	80	8 8	84	80	8	84	84	70	2 2	8	84	84	84	85	82	82	98	98	98	85	84	88	98	¥
	July	а.ш.	92	92	6.0	6 6	;	81	20	81	8	78	8	8	28	? ;	0	8 8	8	8	84	80	8	82	84	82	48	84	82	98	85	84	£,
	June	b.m.	84	22	20 20	e &	3	82	20 1	92	2 22	- 42		8	28	. 82		8 &	25	92	82	82	82	20	84	84	82	84	98	8	2	:	ĕ
	3	a.m.	75	22	9 2	3 %	?	92	9	5 £	92	7	74	47	52	23	2	4	: 42	92	4.	15	18	74	28	82	78	9/	15	75	15	:	75
92	A	p.m.	99	8	8 8	5 2	:	7:	7.	2 5	2. 4.	7.3	2	74	2	22	ž	4.7	: 2	12	74	74	15	72	28	80	28	80	78	28	92	22	74
Temperature (* F) of water, water year October 1954 to September 1955 $/$ Twice-daily temperature measurement in morning and afternoon/	May	a.m.	63	9	9 9	3 %	3	89	:	2 2	- 89	7.5	22	2	1 2	22	6		5	20	73	22	72	74	74	75	92	82	82	92	18	92	13
mperature ($^{\circ}$ F) of water, water year October 1954 to September 1 Twice-daily temperature measurement in morning and afternoon	=	p.m.	09	22	29 62	3 %	3	9	3 :	2 5	2 2	55	9	9	8	88	9	3 8	3 8	89	20	72	73	2	72	72	20	89	69	69	- 65	-	25
r 1954 t	April	а.ш.	20	22	79	3 6	3	8	9	22	28	ç	9	15	8 8	9	4	3 42	8	89	20	29	20	2	2	22	89	89	99	64	99	;	33
Octobe	ch	р. ш.	25	96	4. 4	3 6	3	9	3	% 2	22	5	62	9	35	54	69	3 6	8 8	22	54	62	99	26	8	9	9	22	24	22	2,	8	23
er year isureme	March	a.m.	26	8	200	3 4	;	9	2	2, 2	22	5	3.5	95	20	26	¥	3 2	3	28	99	26	62	54	28	22	9	22	20	20	22	54	26
er, waterre	ary	p.m.	46	£ :	£3	8 4	:	45	25	2 0	45	52	4	45	4	45	46	3 4	4	8	48	20	25	22	54	20	25	23	54	;	:	:	48
of wate	February	а.ш.	40	4:	9 6	9 %	3	£ .	200	45	45	2	. 6	44	. 6	\$	49	5.4	45	4	£3	43	20	25	25	54	20	20	23	:	;	;	45
re (°F) laily te	ary	p.m.	25	Z :	4 2	3 6	3	82	\$	2 2	3 8	45	3 4	5	. .	42	45	4	4	40	40	42	4	42	40	45	4	43	43	40	40	\$	49
mperatu Twice-	January	a.m.	22	25	25	3 6	3	25	50	2 5	2 2	84	3	45	5.	. .	ų	5 4	4	43	40	35	40	40	40	42	4	40	42	40	\$:	\$	45
Tei	oper	р. ш.	-	ì	! 4	2 :		; ;	\$	40	£ £	;	;	;	;	1	4	3 4	. 5	5	42	42	5	45	45	45	45	45	45	54	23	24	:
	December	а.ш.	-	;	!	; ;		1 :	0.	6 6	4 6	-	;	;	;	1		4	4	42	42	85	88	\$	42	45	45	40	44	48	22	20	;
	nber	p.m.	99	8 1	3	3 %	3	51	4	24	25		1	;	;	;		9	8 8	63	63	63	61	99	21	53	46	51	20	;	;	;	:
	November	а.ш.	22	9 t	8 4	3 13	3	21	2	6 4	\$ 2		;	:	;	;		8	8 6	09	63	09	22	99	22	22	84	20	20	25	!	:	;
	ř	P. B.	1.1	92	2.2	5 5	:	2	9	5 t	22	5.	2	22	2 2	22	4	2 5	2 2	88	9	61	63	9	61	09	62	65	64	65	9	62	55
	October	a.m.	74	4.5	9 9	3.5	:	92	2 ;	4 5	2 22	73	12	22	2	12	7.4	: 5		65	9	09	89	22	22	99	09	9	62	63	25	2	33
	Down		1	Z	4	·	,	0	- 0	0 0	10.	11	12	13	14	15	16	17	18	19.	20	21	22	23	24	25	26	27	28	29.	30	J	Ауетаде

NEUSE RIVER BASIN

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.

LOCATION. --4t Streets Ferry about 1½ miles east of Lima, Craven County, N. C.

RAINAGE AREA. --4, Old square miles.

RECORDS AVAILABLE. -(Chemical analyses: September 1954 to September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: September 1954 to September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: September 1954 to September 1955.

**RECORDS AVAILABLE. -(Chemical analyses: Maximum daily, 17,800 micromhos Oct. 15 (m.); minimum daily, 56.7 micromhos Sept. 14 (a.m.).

**Specific conductance: Maximum, 90°F July 28 (p.m.); minimum, 39°F Dec. 8 (a.m.).

**RECORDS AVAILABLE. -(Chemical Analyses) available in district office at Raleigh, N. C. No discharge records available for this station.

Sentember 1954 to September 1955 Chamban

1		lor			o	œ	20	_	o1 o1	mm + m
		Color	11 17	12	0141			<u> </u>	122	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Hd	6.7	7.0	7.2	7.2	7.0	7.1	7.0 6.9 7.1	6.57
	Specific conduct-	ance (micro- mhos at 25°C)	2,390 1,210	2,040	1,050 555	285	972	549	1, 470 6, 180 3, 110	3, 250 2, 150 4, 860 10, 800 17, 800
	ness .Co,	Non- carbon- ate	215 96	177	808	90	°F.	88	118 631 296	314 198 477 1, 220 2, 160
	Hardness as CaCO,	Calcium, mag- nesium	248 130	214	114	44	108	99	156 675 335	353 235 235 520 1,270 2,220
	Dissolved solids	(residue on evap- oration at 180°C)	1,260	1,060	591 300	156	532	301	804 3,520 1,690	1,790 1,180 6,810 12,100
1955		(NO ₃)	1.4	1.4	1.0	e,	1.0	1.0	1.0	1.1 2.0 3.2 1.2
September	ī	Fluoride (F)	0.0	0.	0.0.	0.	0.	o.	999	71111
Chemical analyses, in parts per million, September 1954 to September 1955	:	(C1)	660 312	250	272 127	54	250	127	402 1,900 895	960 620 1, 480 3, 750 6, 630
on, Septemi	3	(804)	99 49	88	33	21	43	29	64 273 145	138 92 311 542 946
per millic	Bicar-	bonate (HCO ₃)	40	45	44 46	46	46	46	46 48 48	44 45 53 72
s, in parts	Potas-	sium (K)	16 9.4	16	5.5	3.9	8.1	5.5	12 44 20	17 8.5 75 125
cal analyse	:	(Na)	388 186	315	168	38	142	77	230 1,090 510	552 360 2,070 3,730
Chemi	Mag-	nesium (Mg)	45 21	37	18 8.8	4.6	16	8.8	27 133 62	67 43 100 260 463
	Cal-	ctum (Ca)	27 18	24	15 13	10	18	12	19 52 32	30 24 43 80 128
		(Fe)	0.08	81.	40.	.04	.04	90.	90.	22 182
	č	(SiO ₂)	3.0	2.4	1.3	1.3	2.2	1.6	3.3	7.4 1.1 4.0 4.0
	Mean	discharge (cfs)								
		Date of collection	Sept. 23-25, 1954	(m.)	Sept. 29 (a.m., p.m.), 30 (p.m.)	Oct. 1 (a.m.), 2 (a.m., p.m.) Oct. 1 (m.), 3 (m.,p.m.),	4 (a.m., p.m.), 5 (a.m.), 6 (a.m.)	3 (a.m.), 4 (m.),	Oct. 7, 8 (m., p.m.), oct. 7, 8 (m., p.m.)	Oct. 9 (m., p.m.), 10-11, 12 (m., p.m.), 13, 14 (a.m.) 13, 14 (a.m.), 14 (p.m.) Oct. 12 (a.m.), 14 (p.m.) Oct. 15 (a.m.) Oct. 15 (m.)

11111

11111

1112

11111

12 9:

Color

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14:16

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.--Continued

6.25 6.4 6.6.5.7 평 6.6 6.6 ance (micro-mhos at Specific conduct-14,000 852 488 1,460 3,110 2,090 2,450 6, 220 3,950 9,220 2,820 1,800 4,690 7,170 2,230 4,320 6,710 5,970 12,100 7,130 13,100 8,500 5,610 3,4106,950 25°C) 370 160 090 Non-carbon-1,670 1,350 609 1,450 885 552 380 148 148 455 742 182 419 699 610 936 936 506 322 ate Hardness as CaCO, mag-Calcium, 1,720 1,400 1,500 930 590 427 030 300 181 492 785 214 456 740 850 352 735 Dissolved (residue on evap-oration at 180°CJ solids 9,230 3,630 1,570 2,700 1,740 11111 Chemical analyses, in parts per million, September 1954 to September 1955 -- Continued Nitrate (NO₅) 8°: 3.1 1111 Fluoride 111111 11111 Ξ ∹ : Chloride (C1) 5,040 1,980 212 108 108 280 290 108 108 1,450 2,300 1,300 1,300 1,880 2,400 2,850 925 1,550 975 2, 100 Sulfate (SO₄) 717 176 440 123 84 28 15 15 16 17 10 10 10 10 74 315 287 198 323 301 201 201 572 301 819 399 249 333 404 1188 116 Bicar-bonate (HCO₃) 54 8 4 8 4 8 8 528555 ទីទីនិង និង 37 4 Potas-sium (K) 11111 1111 8 Sodium (Na) 11:::: 11111 1, 100 490 2,880 540 851 Mag-nesium (Mg) 15 7.1 82 38 320 3 2 2 3 96 39 39 129 129 280 154 302 107 193 194 104 **68** Cal-112 24 8 8 8 9 18 58228 42 88 42 45 42 28 0.02 111111 1118 8 | 2 | 11111 1111 8 : 6 Fe) Silica (SiO₂) 1:8:1 8:1 4:1 ::::: 11111 1111 1112 200 Mean , discharge (cfs) Oct. 23 (p.m.)
Oct. 24 (a.m.)
Oct. 24 (m.)
Oct. 25 (a.m.)
Oct. 25 (a.m.) Nov. 1, 2 (a.m., p.m.), 3 (a.m.), 4 (a.m.). Nov. 2 (m.), 3 (m., p.m.), 4 (m., p.m.). Nov. 5 (a.m.). Oct. 15 (p.m.) 1954 ... Oct. 16-18, 19 (m., p.m.), 20 (m., p.m.), 21 (p.m.), 22 (m.)... Oct. 19 (a.m.), 21 (m., Oct. 27 (p.m.).
Oct. 28 (a.m.)
Oct. 28 (m.)
Oct. 28 (p.m.).
Oct. 29 (a.m.) Oct. 39 (m.) Oct. 29 (p.m.) Oct. 30 (a.m.) p.m.), 22 (p.m.).... Oct. 20 (a.m.).... Oct. 22 (a.m.), 23 (m.) Oct. 23 (a.m.) 25 (p.m.) 28 (a.m.) 28 (m.) 26 (p.m.) 27 (a.m.) Date of collection

11	11	14	6	œ	∞	œ ; ;	8 82	02 1	13	ន្ទ :	13	15
6.3	8.8	8.8	9.9	6.7	8.	6.5	6.5	6.6	6.7	6.7	6.7	9.9
3,570	5,890	4,390	8,470	12, 500	13, 100	10,100 9,930 4,750	14, 700 14, 800	14, 500 2, 280	12, 600	6,330	3,970	1,390
134	602	427	928	1, 420	1, 490	1, 100 1, 020 454	1,710	1,670 198	1, 410	620	364	109
705 165	640	462	970	1,470	1,540	1,140 1,070 490	1,760	1,720	1,460	099	398	137
::	3,170	2,270	4,720	7,350	7,960	5,760	8,870 9,170	9,190	8, 180	3, 550	2,160	732
11	3.1	3.3	8.8	2.3	2.2	5.6	1.5	r: !	8.8	1.0	6.	3.1
11	0.1	83.	=	83	ο.	7:1	7.7	7:	τ:	7:1	ο.	-:
1,550	1,800	1, 280	2,700	4, 250	4, 600	3,300 3,200 1,020	5, 140 4, 940	5,040	4, 500	1,920	1,150	320
307 163	133	86	200	311	328	241 490 212	373 739	714 98	609	273 102	176	64
38	46	43	51	61	62	55 59 44	65	98 39	9	48 40	43	34
::	43	53	89	88	102	δt 	106 95	9.2	92	45	25	9.6
11	982	704	1, 470	2, 270	2, 480	1,800	2,740 2,880	2,840	2, 540	1,100	670	214
139	136	06	200	298	311	231 214 95	362	345 43	294	130	7.1	24
31	32	36	29	86	201	76 76 40	108	120	100		33	15
11	90.0	.10	89.	2	Ŧ	10: 1		90:1	8	:03	.03	11.
	-		4.7	9.9	6.2	1.1	7.1	£. !	8.2	6.7		

Nov. 5 (m.) 1954

Nov. 6 (m.), 7 (m.), 8 (m.), 7 (m.), 8 (m.), 7 (m., 9 (m.), 7 (m.), 9 (m.), 10 (m.),

NEUSE RIVER BASIN -- Continued

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.--Continued

					,			
	Color	1:::	111	111111	111111	111111	111111	1 1 9
	Нq	8.9	6.6	6.3 6.5 6.5 6.4 6.5	6.6	6.6 6.7 6.5 6.7 6.7	6.6 6.7 6.7 6.6	8.6 8.6 8.6 8.6
	Specific conduct- ance (micro- mhos at	25°C) 552 1,090 259	3, 170 1, 650 1, 210	1, 920 1, 940 4, 420 1, 190 2, 590 7, 880	8, 250 3, 120 412 10, 300 8, 730 12, 600	3, 270 3, 530 6, 180 673 2, 760 5, 170	3, 250 284 156 995 153 184	373 402 466 192
	co. Non- carbon-	36 87 14	293 139 97	168 171 555 93 320 621	876 276 19 1,110 922 1,420	292 334 641 	310 11 84 4	12
	Hardness as CaCO, Calcium, No mag- carb	62 114 39	326 167 122	198 200 591 120 352 660	920 310 46 1,160 965 1,470	322 366 675 64	340 340 108 31 31	& ; ; %
	Dissolved solids (residue on evap- oration	at 180°C)	111	111111	411111	11111		
ontinued	Nitrate (NO ₃)	111	:::	::::::	111111	111111	11111	1119
r 1955C	Fluor ide (F)	:::	111	111111	111111	11111	111111	1111
Chemical analyses, in parts per million, September 1954 to September 1955Continued	Chloride (C1)	290 290 46	950 310	430 530 1, 320 290 730 2, 500	2,650 875 76 3,450 2,800 4,250	900 1,020 1,950 135 790 1,550	925 43 21 258 17	81 88 107 31
mber 1954	Sulfate (SO ₄)	31	138 70 83	86 83 197 54 113 370	373 139 15 524 423 629	138 163 304 40 123 225	143 11 10 55 13	15 15 15 15
lion, Septe	Bicar- bonate (HCO ₃)	33	34.6	38 44 83 44 83 74 74	54 33 59 62 62	36 27 27 40 4	28 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	26 24 19
ts per mi	Potas- sium (K)	:::	111	111111	111111	::::::	111111	1 %
es, in par	Sodium (Na)	1:::	111	111111	111111	111111	111111	1 1 1 8
ical analys	Mag- nesium (Mg)	9.0	30 27	37 121 21 72 124	208 55 5.8 231 192 297	62 71 137 9.2	88 8.8.2 1.8 1.9 1.9	6.1
Chem	Cal- cium (Ca)	10 13	28 17 14	19 119 13 23 60	26 34 8.8 70 100	26 30 44 10	28 8.4 8.0 13 7.6	8.1 1.9.
	Iron (Fe)	1:::	1 1 1	111111	111111	111111	111111	0.02
	Silica (SiO ₂)	:::	111	::::::	111111	111111	111111	11 81
	Mean discharge (cfs)							
	Date of collection	Dec. 1 (a.m.) 1954 Dec. 1 (m.,) Dec. 1 (p.m.)	Dec. 2 (a. m.). Dec. 2 (m.). Dec. 2 (m.).	Dec. 3 (a.m.). Dec. 3 (m.). Dec. 4 (am.). Dec. 4 (m.). Dec. 4 (m.).	Dec. 5 (a.m.) Dec. 5 (m.) Dec. 5 (m.) Dec. 6 (a.m.) Dec. 6 (m.) Dec. 6 (m.)	Dec. 7 (a. m.) Dec. 7 (m.) Dec. 7 (m.) Dec. 8 (a. m.) Dec. 8 (m.) Dec. 8 (m.)	Dec. 9 (a.m.). Dec. 9 (m.). Dec. (o.m.). Dec. (o.m.) Dec. 10 (a.m.) Dec. 10 (m.).	Dec. 11 (a.m.) Dec. 11 (m.) Dec. 11 (p.m.) Dec. 12-15

NEUSE RIVER BASIN

23	15	111	111	11 88 1	! ឌ	17 28 22 40 26	27 27 31 31	g !
6.6	6.5	6.9	6.6 4.6 6.6	6.6 6.3 8.6 8.8	6.6 4.0	6.3 6.3 6.3 7.7	က ရောက္တေက လ နာသက် ကားတောင်း	6.5
126 112	129	327 546 1, 210	2,400 1,390 758	151 372 140 8, 360	361	107 88.2 92.8 94.9 96.2 89.9	100 99.5 85.3 104 118	109
110	10	26 44 100	207 134 63	30 30 995	12	111 10 10 8 7	0 0 0 0 1 3 1	1 18
23	25	41 62 118	228 152 80	28 46 25 930	7 7 7 2 2 2 2 3	23 18 20 20 18 18	21 17 17 28 28	22
84	06	111	111	68 56	16	69 72 72 73 69	85 T T 88 E	85
1.3	2.1	111	111	8 4	1.9	- i. i.i.i.i.i.i.i.i.i.i.i.i.i.i.i.i.i.i	997.67.8	1.5
	s.	111	111	2,141	17	944444		7 1
16	16	65 132 320	670 380 182	22 81 18 2,750		22 99 99 99 90 88 89 90 90 90 90 90 90 90 90 90 90 90 90 90	10 11 11 13 13	12
15	15	24 31 59	111 65 43	15 24 15 390	22 16	13 13 12 13 14 15 17	12 10 7.4 7.9 7.9	6.7
16	18	18 22 22	26 22 21	20 20 43	18 16	41 12 12 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	18 21 19 30 30	31
2.2	2.0	111	:::	2.1	1.8	0.6 1.0 2.2 4.1 1.6	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2.5
10	12	:::	111	16 14 	12	11 7.6 7.7 8.7 9.2	9.4 10 17.9 11 13	: :
2.0	2.2	4.9 9.2 18	28 13 13	2.4 5.8 2.0	4.6	12.2	1.5	1.7
8.8	6.4	8.4 9.6 18	22 15	7.2 8.8 6.7	6.9	8 4 4 6 6	7.7.00.00	6.0
.03	.07	111	111	4, 1, 8, 1	1 4	90.	33 448 111	.23
13 7.9	9.0	;;;	111	10	12	10 10 9.6 10 6.3	13 8.5 9.6 12 10 4.3	8, 1

Dec. 16-20, 1954 Dec. 213.	Jan. 11 (a. m., m.) Jan. 11 (p. m.), 12 (a. m.) Jan. 13 (a. m., p. m.). Jan. 13 (a. m., p. m.), Jan. 18 (a. m., p. m.), Jan. 18 (a. m., p. m.), Jan. 16 - 16, 20 (m., p. m.) Jan. 16 - 16, 20 (a. m.) Jan. 20 (a. m.)	Feb. 1-10 Feb. 11-19 Mar. 1-10 Mar. 11-20 Mar. 21-31	Apr. 1-10. Apr. 11-20. Apr. 21-30. May 11-10. May 21-31.	June 1-5, 6 (a.m., m.), 7 (a.m., p.m.), 8 (p.m.) June 6 (p.m.), 7 (m.), 9 (a.m.)
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NEUSE RIVER BASIN -- Continued

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.--Continued

		Color	1 ;	:	82	18	;	1	92 :	81	: :	38	35	8:::
		Н	6.9	£.	6.9	6.5	8.0	7.1	8.7	6.6	8.8	9.6	6.8	6.6
	Specific conduct-	ance (micro- mhos at 25°C)	671	4, 120	3,180	884	1,620	358	484	303	2,930 1,050	158 125	126 82.0	86.7 457 1,020 221
	sse O	Non- carbon- ate	47	395	296	69	138	18	31 759	12	270 80	e	0 8	35 86 12
	Hardness as CaCO,	Calcium, mag- nesium	72	426	325	98	166	46	56 799	39	300	23	25	18 54 107 33
	Dissolved solids	(residue on evap- oration at 180°C)	: :	:	1, 700	473	;	:	258	167	11	93	81 73	2111
ontinued		Nitrate (NO ₃)	1 1	:	8.0	1.0	;	1	1.3	ть	; ;	1.6	2.1	®
1955C	;	Fluoride (F)	: 1	1	0.2	63	:	:	67	Ψ.	11	0 4	00	9
Chemical analyses, in parts per million, September 1954 to September 1955 Continued		Chloride 1 (C1)	172 640	1, 220	006	225	440	78	2, 360	45	860 268	24 15	14 8.2	8.0 109 260 44
nber 1954		Sulfate (SO ₄)	32	187	145	6	55	16	31	12	114	4.6	6.0	6.9 22 47 11
ion, Septer	Bicar.	bonate (HCO ₃)	31	88	32	32	34	34	30 a 49	83	36	32	31	22.22.28.28.29.29.29.29.29.29.29.29.29.29.29.29.29.
ts per mill	Potes.	stum (K)	11	;	22	6.9	:	:	9.4	4.6	11	2.5	2.2	8
ses, in par		Sodium (Na)	11	;	515	133	1	!	02	- 41	::	81 81	13	7.5
ical analys	Mag-	nesium (Mg)	11	2	64	16	30	5.7	8.4	4.6	59 18	2.1	1.7	 8.0 19 3.6
Chemi	Cal-	cium (Ca)	017	88	52	12	11	9.1	55.4	8.1	13	4 5.	2.4	5.6 8.6 12 7.4 (CO ₃).
		Fron (Fe)	1 1	:	0.01	20.	1	1	18: 1	26	; ;	20.	.10	.22 rrbonate
		Silica (SiO ₂)	: :	1	8.1	7.9	ł	1	7.3	3.5	::	4. 6 5. 2	ი. ლ ლ. ლ.	9.3 .22 8.5
	Mean	discharge (cfs)												7 parts per mi
•		Date of collection	June 8 (a.m., m.), 9 (p.m.) 1955	June 10 June 11 (a.m.), 13 (m.),	17 (m.), 18 (a.m., p.m.)	14 (p.m.), 15, 17 (p.m.), 20 (p.m.)	20 (m.)	June 12 (a.m.), 16 (a.m.) June 12 (m., p.m.), 14 (a.m., m.), 16 (m.,	p.m.), 17 (a.m.), 19, 20 (a.m.) June 18 (m.) June 21 (a.m.), 23 (a.m.,	m.), 24 (m., p.m.), 25 (p.m.), 26 (m.), 27 (a.m.)	(a.m., m.) June 22 (p.m.) June 23 (p.m.) 25 (a.m.) 24 (a.m.)	(a.m., p.m.), 27 (m., p.m.), 28-30 July 1-10	July 11-15, 16 (a.m., m.). July 16 (p.m.), 17-20	31 (a.m.). 31 (a.m.). 31 (a.m.). 31 (a.m.). 31 (a.m.). 31 (a.m.). 31 (a.m.) a.m. 4 includes equivalent of 7 parts per mil

		9.1	.26		1,2	9.6	2.2	56	8.8	10	0.	1.8	11	20	0	102	6.7	20
	Aug. 10 (a.m.)	;	;	_	62	;	1	36	153	910	;	1	;	325	296	3,060	6.4	;
7.6 1.14 87 2.04 1.57 9.04 8.2 7.05 9.04 1.06 1.06 1.06 <th< td=""><td>Aug. 10 (m.)</td><td>:</td><td>;</td><td>_</td><td>182</td><td>;</td><td>;</td><td>26</td><td>436</td><td>3,730</td><td>;</td><td>;</td><td>1</td><td>924</td><td>878</td><td>8,210</td><td>6.5</td><td>;</td></th<>	Aug. 10 (m.)	:	;	_	182	;	;	26	436	3,730	;	;	1	924	878	8,210	6.5	;
7.6 .14 87 204 1,670 60 37 467 3,050 .0 6,560 1,060 1,030 <t< td=""><td>Aug. 10 (p.m.)</td><td>;</td><td>;</td><td></td><td>33</td><td>1</td><td>1</td><td>32</td><td>02</td><td>304</td><td>1</td><td>;</td><td>;</td><td>186</td><td>160</td><td>1,940</td><td>6.4</td><td>1</td></t<>	Aug. 10 (p.m.)	;	;		33	1	1	32	02	304	1	;	;	186	160	1,940	6.4	1
6.7 .14 87 2.04 1.67 9.0 37 467 3.060 .0 6.560 1,060 1,030 9.040 6.2 6.7 .12 26 38 330 12 18 86 580 .0 .1 1,060 1,990 1,990 1,990 6.7 6.2 .18 11 8.6 78 4.7 16 25 142 .0 1.5 312 6.4 209 2,110 6.2 6.2 .31 11 8.6 4.7 16 25 142 .0 1.5 312 6.4 209 2,110 6.2 6.2 .31 8.9 4.1 39 3.4 .15 19 68 .0 1.5 312 6.3 50 5.3 6.4 6.4 .29 6.2 1.0 2.0 1.5 312 6.8 .0 2.3 88 21 114	Aug. 11 (a.m.), 13(a.m.,	_	_	_	_	_		-		_								
8.6 .14 128 419 3,330 119 66 822 6,020 .0 .4 10,900 2,040 1,990 16,300 6.7 6.7 .12 26 38 330 12 18 86 580 .0 2.1 1,090 2,24 209 2,110 6.2 6.2 .18 11 8.4 .7 16 25 142 .0 1.5 312 63 50 553 6.4 6.4 .29 6.3 1.3 1.3 1.5 14 11 18 .0 2.1 1,090 2.24 209 2,110 6.2 6.2 .31 6.3 1.3 1.3 1.3 1.4 1.5 1.6 1.5 1.6 1.7 1.6 2.1 1.0 0.2 1.1 1.4 1.1 1.2 1.4 1.1 1.8 1.1 1.8 1.1 1.8 1.1 1.2 1.1	E.)	7.6	17	87			8	37	467	3,050	0.	-	2,560	1,060	1,030	9,040	6.2	4
6.7 1.12 26 38 330 12 18 86 860 0.0 2.1 1,060 224 209 2,110 6.2 6.4 6.2 6.4 6.2 6.1 1.2 6.2 6.4 6.2 6.4 6.4 6.2 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4	Aug. 11 (m., p.m.), 12	8.6	-14	128			119	99	822	6,020	<u>.</u>	4.	10,900	2,040	1,990	16, 300	6.7	32
6.2 .18 11 8.6 78 4.7 16 26 142 .0 1.5 312 63 60 553 6.4 6.2 .31 8.9 4.1 39 3.4 .15 19 68 .0 2.0 181 39 27 300 6.7 11 6.1 11 8.4 .18 .0 2.0 181 39 27 300 6.7 11 6.1 11 8.4 11 8.4 18 .0 2.0 181 39 27 300 6.7 11 6.4 11 6.4 11 6.4 11 6.4 11 6.4 11 6.2 11 6.2 11 6.8 .0 2.1 6.8 .0 2.1 77 16 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 1 6.2 1 1	Aug. 13 (p.m.), 14 (a.m.)	6.7	.12	56	 88	330	12	18	98	280	0.	2.1	1,090	224	508	2,110	6.2	45
6.2 . 31 8.9 4.1 39 3.4 . 15 19 68 0 2.0 181 39 27 300 6.7 14.2 0 1.5 312 63 50 553 6.4 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	Aug. 14 (m., p.m.), 15										•			;				;
6.4 . 39 6.3 1.3 11 2.5 14 15 19 68 . 0 2.0 181 39 27 300 6.7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(p.m.), 17 (m., p.m.)	6.2	.18	=	œ.		4.7	19	52	142	o.	1.5	312	63	2	253	4.	8
6.2 .31 8.9 4.1 39 3.4 .15 19 68 .0 2.0 181 39 27 300 6.7 1 7.2 .39 6.3 1.3 1.1 2.5 14 11 18 .0 2.3 88 21 10 114 6.4 114 6.4 114 6.4 115 6.2 11 6.2 11 6.4 11 6.2 11 6.2 11 6.2 11 6.2 11 6.2 11 6.2 11 6.2 11 6.2 11 6.4 6.2 11 6.2 11 6.8 .0 2.1 70 20 4 73.7 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2 1 6.2<	(a.m.: p.m.), 17				-													
6.4 . 29 6.3 1.3 11 2.5 14 11 18 . 0 2.3 88 21 10 114 6.4 11 7.2 3.0 6.2 1.0 6.1 2.9 1.6 6.7 9.0 . 0 2.4 b87 17 5 78.5 6.2 1 8.4 . 0.4 4.8 1.9 5.3 2.2 17 3.4 6.8 . 0 1.0 77 16 2 6.2 1 6.8 1.9 4.4 1.3 5.0 2.2 17 4.7 5.8 . 0 2.1 c77 16 2 6.3 9 6.2 1 	(a.m.), 18	6.2	3.	8.8	4.1	39	3.4	15	19	89	0.	7.0	181	38	21	300	6.7	8
8.4 .24 <td>Aug. 16 (m.), 19-20</td> <td>6.4</td> <td>. 29</td> <td>6.3</td> <td>1.3</td> <td>11</td> <td>2.2</td> <td>14</td> <td>=</td> <td>18</td> <td>0.</td> <td>2.3</td> <td>88</td> <td>21</td> <td>2</td> <td>114</td> <td>6.4</td> <td>120</td>	Aug. 16 (m.), 19-20	6.4	. 29	6.3	1.3	11	2.2	14	=	18	0.	2.3	88	21	2	114	6.4	120
8.4 . 24 4.8 1.9 5.3 2.6 19 5.0 6.8 .0 2.1 70 20 4 73.7 6.2 1 8.1 .09 4.0 1.2 5.3 2.2 17 3.4 6.8 .0 1.9 c.70 15 1 64.6 6.2 1 65.6 6.2 1 65.8 .18 4.4 1.3 5.0 2.3 17 4.7 5.8 .0 2.1 c.77 16 2 63.9 6.2 1	Aug. 21-31	7.2	.30	5.2	1.0	6.1	8.3	12	5.7	9.0	0.	4.5	P 84	17	ιO	78.5	6.2	160
6.8 .18 4.4 1.3 5.0 2.3 17 4.7 5.8 .0 1.9 c70 15 1 64.6 6.2 1 6.8 .0 1.9 c70 15 1 64.6 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 1 6.8 6.2 1 6.8	Sept. 1-10	4.8	.24	8.8	1.9	5.3	2.6	19	5.0	8.9	0.	2.1	02	20	4	73.7	6.2	160
6.8 .18 4.4 1.3 5.0 2.3 17 4.7 5.8 .0 2.1 c77 16 2 63.9 6.2 1	Sept. 11-20	8.1	60.	4.0	1.2	5.3	2.2	17	3.4	8.9	0.	1.9	o. 20	12	-	94.6	6.2	120
	Sept. 21-30	8.9	. 18	4.4	1.3	2.0	2.3	17	4.7	5.8	0.	2.1	c77	91	2	63.9	6.2	140
	Average	:	1	;	:	1	ï	1	1	ı	;	;	1	:	;	1	:	;

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Average of three times daily measurement, morning, noon, and afternoor/

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	77	62	51	52	41	56	56	67	79	80	86	77
2	78	62	51	54	43	55	58	66	78	83	86	76
3	78	60	50	52	44	55	59	66	77	83	85	76
4	79	58	50	52	44	57	61	68	76	84	86	76
5	79	57	50	52	42	58	60	71	77	-78	87	76
6	79	54	51	53	44	61	61	71	78	8.1	88	75
7	76	56	45	53	47	60	63	71	79	₹8	87	75
8	74	56	43	52	47	59	61	73	79	87	87	75
9	72	57	41	51	47	58	61	72	77	83	86	75
10	72	57	43	50	47	57	63	73	77	83	85	74
11	74	57	43	49	51	60	63	74	78	83	83	73
12	75	57	43	48	47	62	62	74	80	83	79	74
13	74	57	44	45	45	61	66	73	77	83	77	72
14	74	56	45	45	43	59	68	73	77	8.5	77	72
15	75	55	43	44	44	59	69	74	77	8.5	77	73
16	70	57	43	44	44	62	70	72	78	6.3	78	73
17	70	58	43	43	45	62	70	72	77	85	77	73
18	66	58	45	43	45	62	71	72	76	84	78	73
19	67	60	45	43	46	59	72	71	76	€4	78	73
20	67	59	43	40	46	60	72	74	78	84	79	73
21	66	58	42	40	47	58	71	75	78	83	79	73
22	62	59	41	41	49	62	71	76	79	83	80	74
23	61	58	40	41	53	59	72	77	81	84	80	74
24	61	57	42	41	51	57	73	76	81	85	78	75
25	62	57	42	42	50	58	73	76	82	85	77	74
26	63	58	42	44	50	61	71	79	79	87	76	73
27	65	56	42	43	52	57	66	82	80	87	75	73
28	65	54	44	42	54	55	67	81	79	88	76	73
29	64	53	47	41		53	67	82	79	86	76	73
30	64	51	50	43		53	66	81	81	86	76	73
31	63		51	41		55		79	_==	86	77	
ver- age	70	57	45	46	47	58	66	74	78	84	80	72

SWIFT CREEK NEAR VANCEBORO, N. C.

LOCATION. --At gaging station at highway bridge, 2s miles upstream from bridge on State Highway 118, 2s miles downstream from Clayroot Swamp and 3s miles northwest of Vanceboro, Craven County.

DRAINAGE AREA. -- 182 square miles.

EXCORDS MAILABLE. - Conder last analyses: October 1950 to September 1952, January to September 1955.

Water temperatures: October 1951 to September 1952, October 1951 to September 1952.

Water temperatures: Maximum daily, B65 micromhos June 21. minimum daily, 29.5 micromhos Sept. 21.

Specific conductance: Maximum daily, 865 micromhos June 21. minimum daily, 29.5 micromhos Sept. 21.

Specific conductance: Maximum, 97 7 25.30, minimum, 36 F Dec. 23.

Specific conductance: Maximum, 87 F July 7, 25.30, minimum, 15 ppm Sept. 21.30, 1955.

Specific conductance: No record 1951.-22.

Specific conductance: No record 1951.-22.

Specific conductance: Maximum, 87 F July 29, 1955, minimum, 36 F Dec. 23, 1954.

REMARKS. - Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October

1954 to September 1955 given in WSP 1383.

		Color	23	17	12	14	23	11	31	32	20	33	40	30	40	37	20	;	45	20	1	22	:
		pH.		7.1							6.5				7.0	1.6	7.5	8.8	6.9	6.3	9.3	4.7	7.5
	Specific conduct-	ance (micro- mhos at 25°C)	342	377	336	315	283	283	281	268	230	268	295	295	329	297	272	462	553	662	122	231	352
	ness CO ₃	Non- carbon- ate	45	38	25	26	48	4	42	40	42	36	31	23	19	24	15	12	12	4	91	13	19
	Hardness as CaCO,	Calcium, mag- nesium	96	91	81	81	20	73	73	69	62	11	71	72	16	67	20	22	64	09	29	37	45
	Dissolved solids	(residue on evap- oration at 180°C)	215	226	215	199	180	174	175	173	152	160	182	183	216	181	174	i	308	349	:	148	;
		(NO ₃)	6.0	1.1	3.6	3.4	2.1	1.0	₩.	1.9	.7	~?	1.5	1.5	2.5	1.6	1.7	;	4.	2.6	;	9.	;
er 1955	:	Fluoride (F)	0.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	Τ.	87	٦.	۲.	1	۲.	.2	;	0.	:
Chemical analyses, in parts per million, January to September 1955		(C1)	36	45	42	36	34	32	32	31	20	27	35	32	52	40	40	66	123	120	180	39	72
n, January		(SO,	56	55	28	61	53	21	48	45	45	44	38	34	30	28	24	13	16	14	17	18	19
per millio	Bicar-	bonate (HCO ₃)	62	25	33	30	22	32	38	32	22	43	49	99	69	23	43	a 51	63	99	p 29	23	32
, in parts	Potas-	sium (K)		3.2						2.3	2.1		1.8			89 89		i	4.2	5.1	;	3.1	1
al analyses	-	(Na)	24	33	30	56	24	24	42	23	16	21	21	22	33	30	28	;	80	104	:	78	1
Chemic	-зеЖ	neslum (Mg)	3.2	1.7	3.1	3.1	2.6	2.5			2.5				2.4	3.2	1.4	1.7	2.3	1.9	1.4	1.3	1.3
	Cal-	ctum (Ca)	33	34	21	27	24	22	25	24	21	24	22	56	26	22	18	21	22	27	21	13	16
	ļ	(Fe)	90.0	.05	.03	90.	90.	.05	.10	. 14	.21	. 27	.13	.11	.16	60.	.07	;	. 24	Ξ.	;	.07	:
	1	(SiO ₂)		7.6					3.2	4.3	3.2	8. 8.	8.4	5.5	8.8	8.3	2	;	==	6.6	:	8.1	1
	Mean	discharge (cfs)	2.7	5.3	25	18	24	16	16	26	40	74	24	10	4.8	12	6.5	9.2	3.4	2.4	22	18	56
		Date of collection	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31	Apr. 1-10	Apr. 11-20,	Apr. 21-30	May 1-10	May 11-20	May 21-24, 27-30	May 25-26, 31	June 1-10	June 11-20	June 21-22	June 23-26, 28-30	June 27

a includes equivalent of 6 parts per million of carbonate (CO₃) b includes equivalent of 9 parts per million of carbonate (CO₃)

Color

100 150 140 200 63

NEUSE RIVER BASIN--Continued

SWIFT CREEK NEAR VANCEBORO, N. C.--Continued

ļ						_	_	_		_			_		_			ļ
		Hd	6.9	6.3	6.5	9.9	6.7	7.3	6.4	6.3	6.2	6.2	6.4	6.2	9.9	6.2	:	
	Specific conduct-	ance (micro- mhos at 25°C)	267	167	140	171	272	157	86.9	901	. 91.8	148	144	70.3	88.0	48.4	279	
	ress CO,	Non- carbon- ate	19	13	15	8	S.	7	80	13	ຕ	18	17	æ	8	2	23	
	Hardness as CaCO,	Calcium, mag- nesium	46	31	32	42	45	29	22	29	32	41	39	22	23	12	55	
	Dissolved solids	(residue on evap- oration at 180°C)	166	;	116	134	:	108	c 86	d112	1	;	:	:	5 6	f 68	173	
ed		(NO ₃)	4.2	:	1.7	1.8	1.5	2.4	8.8	3.5	=:	;	1.4	۲.	2.3	2.5	1.8	
Continu	: :	Fluor ide (F)	0.2	1	٥.	٥.	0.	0.	٥.	•	0.	ł	٥.	٥.	٥.	۰.	0.0	
Chemical analyses, in parts per million, January to September 1955 Continued		Chloride (C1)	42	56	16	21	45	22	7.8	9.0	6.0	16	14	5.0	10	4.5	43	
nary to Sep		Sulfate (SO ₄)	21	22	17	23	15	8.8	8.8	12	5.1	18	91	5.6	9.3	7.3	28	
illion, Jan	Bicon.	bonate (HCO ₃)	\$	22	21	42	49	34	17	20	36	27	27	17	18	23	39	
arts per m	Dotas	stum (K)	3.5	ì	2.2	2.6	3.2	3.6	2.4	2.7	3.1	1	4.2	2.0	1.8	1.8	2.8	
lyses, in p		Sodium (Na.)	30	١	12	16	32	91	0.9	6.0	3.4	;	11	4.1	6.7	3.2	92	
mical ana	Mag	neslum (Mg)	1.9	6.	1.3	1.6	1.7	۲.	-	1.3	1.6	1.4	1.5	6.	9.	1.1	1.9	of mineral constituents 59 courts and
Che	Ca)-	ctum (Ca)	16	11	=	14	15	11	7.8	9.6	10	14	13	7.2	8.0	4.4	19	K9 nonto
		Fon (Fe)	0.11	;	.33	8	.54	.23	. 27	.30	. 28	!	. 20	.56	.40	-1	0.19	thronto
		Silica (SiO ₂)	8.8	;	9.3	6.6	8.7	6.3	9.9	11	10	1	12	8.3	2	8.8	7.4	rol const
	Moon	discharge (cfs)	6.9	46	92	7.3	11	3.3	1,360	874	880	113	189	1.480	1,030	3,040	288	
		Date of collection	July 1-9, 1955	July 10	July 11-20	July 21-31	Aug. 1-3	Aug. 4-10	Aug. 11-20	Aug. 21-31	Aug. 25e	Sept. 1e	Sept. 1-3	Sept. 4-10	Sept. 11-20	Sept. 21-30	Average	c Organic matter present: sum

c Organic matter present; sum of mineral constituents 53 parts per million. d Organic matter present; sum of mineral constituents 65 parts per million. e Values are not included in averages. I organic matter present; sum of mineral constituents 38 parts per million.

Temperature (°F) of water, water year October 1954 to September 1955 SWIFT CREEK NEAR VANCEBORO, N. C. -- Continued

																																		l
	September	nin	72	72	72	12	72	72	72	72	72	71	71	2	69	89	89 —	89	69	69	69	69	6	5	5	71	F —	2	69	69	69	69	-	2
	Sept	max	72	72	72	72	72	72	72	72	72	72	71	77	2	69	69	69	69	69	2	5	71	71	7	7	7	71	17	69	69	5	:	11
	August	min	78	18	48	28	78	77	77	1	18	78	76	23	12	72	<u>ٿ</u>	74	74	74	74	74	75	16	77	92	75	73	71	<u>_</u>	2	2 5	=	75
	Aug	max	78	42	2	28	78	78	77	78	28	48	48	16	23	E.	74	75	74	74	74	75	76	77	-12	7	92	75	22	5	72	25	2	76
	July	min	17	7	23	74	75	77	92	16	16	15	75	15	74	2	2	72	74	9.4	77	48	78	8	7	82	8	79	28	2	19	200	٥	76
	ñ	max	22	2	75	91	75	82	79	16	78	92	75	75	75	7	72	74	16	77	78	48	84	24	28	2	42	2	79	62	42	29	٥	77
	June	min	72	2	69	67	67	89	2	72	69	89	89	69	2	2	69	67	89	69	69	69	70	72	23	74	74	74	72	2	2	2	;	20
	Ju	max	74	72	2	69	69	5	72	72	72	69	69	72	72	=	2	69	2	20	20	2	72	22	74	4	*	74	74	72	2	1	1	11
	May	min	29	61	62	62	8	99	65	65	99	99	67	69	8	89	89	99	99	99	65	65	67	69	69	69	2	72	74	74	75	75	*	98
	M	max	63	62	ន	63	99	67	67	67	67	67	69	69	69	68	89	89	99	99	99	67	69	69	69	2	12	74	74	22	12	75	9	69
raph7	Ŧ	min	49	51	25	55	26	28	26	26	26	26	99	8	62	63	63	65	99	99	99	29	89	69	69	69	2	69	65	2	62	63	:	62
ermogn	April	max	51	25	22	26	29	26	22	22	24	9	9	62	63	89	65	99	99	99	67	89	70	2	2	2	2	20	69	65	65	8	;	63
uated th	March	min	49	25	S	53	26	59	57	22	25	25	52	22	22	22	29	25	28	57	23	2	52	29	22	22	7.	26	53	51	20	49	AB	54
ohol-act	Ma	max	52	23	23	8	28	9	9	21	54	25	22	8	20	9	22	62	28	28	24	23	26	9	8	22	99	28	28	53	21	20	A.B	56
Continuous ethyl alcohol-actuated thermograph/	uary	min	39	39	41	41	40	40	41	46	45	44	44	43	40	38	38	39	40	42	43	43	43	45	47	49	48	47	47	47	1	;	:	43
a snonu	February	max	39	42	43	43	41	41	46	47	46	45	47	42	43	\$	38	40	42	44	43	43	45	47	49	49	49	48	47	48	!	1	:	44
Contin	ary	min	49	49	48	49	49	49	49	47	47	46	46	45	4	42	42	42	41	41	40	38	38	39	39	40	40	40	40	40	40	9 6	38	43
	January	max	20	20	20	49	49	20	22	49	47	47	46	46	45	44	42	42	42	42	42	40	39	40	\$	9	4	4	40	40	40	40	£0	44
	nber	min	4	43	42	41	41	41	38	38	8	33	40	9	40	40	41	41	41	41	43	42	40	37	36	37	æ	38	39	38	43	48	2	41
	December	max	46	45	43	42	41	42	41	39	39	40	40	40	40	41	41	41	41	43	43	43	42	\$	37	38	æ	39	39	43	48	22	70	42
	nber	min	1	1	1	!	!	1	;	:	1	44	46	43	46	41	48	20	54	22	9	9	57	23	2	20	48	46	44	45	46	46	:	:
	November	max	1	;	;	!	1	1	;	;	1	4-	48	8	48	48	20	25	22	9	61	61	99	22	23	2	20	49	47	46	22	48	-	i
	per	min	11	69	69	;	;	;	;	;	;	:	;	;	:	;	;	:	;	;	:	:	;	:	:	1	:	;	;	;	;	ļ	:	1
	Octobe	max	7.1	7	7	;	;	;	;	;	1	:	;	;	:	i	1	;	1	1	ì	;	;	;	1	;	1	;	;	1	;	;	:	-
		nay.	1	2	3	4	2	6	7	8	6	10	11	12.	13	14	15	16	17	18	19	20	21	22	23.	24		26.	27	28	29	30]	Average

SWIFT CREEK AT VANCEBORO, N. C.

LOCATION.—At bridge on county road in Vanceboro, Craven County, 50 feet southwest of U. S. Highway 17.

BAZHARGE AREA.—226 equare miles.

BRANAGE AREA.—Case analyses: January to September 1955.

Water temperatures: January to September 1955.

Water temperatures: January to September 1955.

Specific conductance: Maximum, 144 ppm Jan. 11; minimum, 17 ppm Sept. 21-30.

Specific conductance: Maximum, 80°F on Maximum, 80°F on Maximum, 80°F on Maximum, 80°F on Maximum, 80°F on Maximum, 80°F on Maximum, 80°F on many days during July and August; minimum, 38°F several days during January and February.

RWARARGS.—Records of Specific conductance of daily samples from January to September 1955 available in district office at Raleigh, N. C. records available for this station.

No discharge

1		, I			
	Color	1288812	37 37 55 55 55	882222	120 120 140 140
	Hd	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	6.6 6.6 6.7 7.4	7.1 6.8 6.8 7.1 7.3	8.8.8.8.8 4.4.8.8
	Specific conduct- ance (micro- mhos at 25°C)	433 603 347 330 228 278	268 268 217 217 245	256 249 249 328 328	260 149 155 149 73.6 95.3
	ness ICO ₃ Non- carbon- ate	66 65 64 52 52 53	7444 351 200 200 200 200 200	18 18 16 17	22 18 4 4 11
	Hardness as CaCO ₃ Calcium, No mag- car nesium a	102 114 92 91 80 75	E 88 88 88 88	67 68 68 68 69 69 69	34 34 34 20 20 28
	Dissolved solids (residue on evap- oration at 180°C)	273 224 215 198 183 174	169 169 154 144 153	164 174 176 161 158 197	166 127 132 125 75 a 108
	Nitrate (NO ₃)	9; 1.15 6; 1.15 6; 2;	H 4. W 80 80 80	44424	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
er 1955	Fluoride (F)	0.100001	0.000.7.7.		HH. 1.000
Chemical analyses, in parts per million, January to September 1955	Chloride (C1)	61 115 37 32 30 31	28 20 20 31 31	33 33 34 54 54	43 116 117 16 8.0
ion, Januar	Sulfate (SO ₄)	73 67 70 72 67 68 58	52 446 445 377	27 24 23 19	24 20 11 8.5 10.5
s per mill	Bicar- bonate (HCO ₃)	25 25 25 25 25 25 25	2222222	61 61 52 58 58	2 5 4 1 2 3 4 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5
s, in part	Potas- sium (K)	8 1 2 2 2 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		લાલાલાં માં આવે. જલલ લ 4મન
ical analys	Sodium (Na)	40 29 21 24 24	22 21 17 17 23 23	35 25 25 35 35 35 35 35 35	29 114 12 4.5 5.4
Chem	Mag- nesium (Mg)	တာကတာထက် လောက်တွင်းကိုက်		640000 640000	다다다다 '다
	Cal- cium (Ca)	33 31 32 32 32 34 32 33	22 22 23 23	272272	17. 13. 14. 6.5 9.3
	Iron (Fe)	8 888.89	9,511.00		119 13 28 28 28 45
	Silica (SiO ₂)	13 13 10 10 10 7.3	ယ. က်ရန္ရ ယမ္မာတေန႕ နာ	4.4.4.F.R.F. 8.7-4.800	11. 12. 12. 12. 6.7
	Mean discharge (cfs)				
	Date of collection	Jan. 1-10, 1955 Jan. 11. Jan. 21-20 Jan. 21-31 Feb. 1-10 Feb. 10-28	Mar. 1-10 Mar. 11-20 Mar. 21-31 Mar. 21-31 Apr. 11-20 Apr. 21-30	May 1-10 May 11-20 May 21-31 June 1-10 June 11-20 June 21-30	July 1-10 July 11-20 July 21-31 Aug. 1-10 Aug. 11-20

a Organic matter present; sum of mineral constituents 61 parts per million.

Sept. 1, 1955 Sept. 1-10 Sept. 11-20 Sept. 21-30	8.9 0.46 8.9 .16 5.6 .20	- 12 8.8 5.7.2 5.6	1.1 1.8 1.1 6	5.8 5.5 4.1	4.0.0.	33 21 19 17	11 7.1 6.7 4.4	12 8. 2 7. 5 5. 8	1000	2.1	 88 77 b70	36 24 17	0770	129 83.9 81.8 59.5	8. 8. 8. 8. 8. 8. 8. 8.	140 120 200
Average	7.6 0.14	50	2.5	20	2.3	36	33	58	0.0	1.4	156	59	29	240	;	88
b Organic matter present; sum of miner	sum of mineral constitue	ents 40 parte	per mill	lon.										!		

SWIFT CREEK AT VANCEBORO, N. C .-- Continued

Temperature (°F) of water, January to September 1955 /Once-daily measurement at 12 m./

1			Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
				48	40	55	54	65	75	75	80	76
2		l	1	50	42	56	55	65	75	75	80	75
3	1	1	}	46	42	56	56	65	75	77	1	
4		1	l	49	38	58	56	65	74	77	80	
5		1		46	40	58	58	65	74	77	80	75
6		l	ŀ	52	42	64	60	70	76	78	80	76
7	1	1	ſ	48	45	56	60	67	76	78	80	70
8	1	1	\	46	45	56	50	70	76	78	80	75
8 9	ſ	ſ	1	46	44	58	60	70	75	78	80	75 75
10				46	45	56	62	70	72	76	80	75
11			}	46	50	68	64	70	75	76	80	72
12	(ſ	1	44	45	60	64	70	75	78	78	74
13	1	{	\	42	42	62	65	70	75	77	76	72
14		l	ĺ	42	40	58	68	70	75	74	76	70
12 13 14 15	1	1		42	40	56	70	70	75	75	78	70
16	1	Ì	1	42	40	64	68	70	75	78	76	70
17	İ	į	1	42	44	62		70	75	78	78	70
17 18	\	1	l l	40	44	60	70	68	75	80	78	72
19 20	1	ĺ	i	42	42	58	70	70	75	78 78	78	68
20		1		38	46	56	70	70	75	78	76	68
21			1	38	47	56	73	70	75	78	78	65
22 23 24	l	i	Í	40	48	60	73	72	76	80	80	72
23	ļ	Į.	Į.	40	50	58	72	74	78	80	80	68
24	i	ĺ	1	40	48	58	74	74	77	80	80	70
25	ļ			38	48	58	76	75	77 78	80	76	70
26		1	1	40	48	56	73	75	75	80	75	75
27	l	1	1	42	50	60	70	76	75	80	75	70
28	l	l	Į.	40	53	56	67	78	75	80	75	75
29	1	1	1	38		52	65	77	75	80	75	75
30	l	ĺ	!	40		52	65	76	75	80	75	73
31	L	_	i	38		55		75_		80	76	
Aver- age				43	45	58	65	71	75	78	78	72

FRENT RIVER NEAR TRENTON, N. C.

LOCATION --At gaging station, 50 feet downstream from Free Bridge, 800 feet downstream from Little Chinquapin Branch, 14 miles southwest of Phillips Crossroads, and 6 miles west of Trenton, Jones County.
DRAINAGE AREA --168 Square miles.
RECORDS AVAILABLE.--Chomical analyses: October 1951 to September 1953, January to September 1955.

RECORDS AVAILABLE..-Ciemical analyses: October 1951 to September 1953, January to September 1955.

Water temperatures: October 1951 to September 1953, January to September 1955.

EXTREMES: 1955.--Dissolved solids: Maximum, 149 ppm Feb. 1-10; minimum, 84 ppm Aug. 11-20.

Bardness: Maximum, 79 ppm Feb. 1-10, Feb. 120-28; minimum, 24 ppm Aug. 11-20.

Specific conductance: Maximum alf pully, 234 mircromhos Feb. 10; minimum, 44.9 mircromhos Aug. 12.

Mater temperatures: Maximum, 124 ppm Nov 1-10, 1952; minimum, 27 Feb. 13, 14, 1955.

Hardness: Maximum, 112 ppm Nov 1-10, 1952; minimum, 149 ppm Feb. 1-10, 1955; minimum, 38 Feb. 13, 14, 1955.

REMRES: 1951-53, 1955.--Dissolved solids: Maximum, 149 ppm Feb. 1-10, 1955.

REMRES: -Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

					Chem	ical analys	ses, in par	ts per mil	lion, Janua	Chemical analyses, in parts per million, January to September 1955	mber 1955							
	Mean			Cal-	Mag-	:	Potas-	Bfcar-	:	:	i		Dissolved solids	Hardness as CaCO,	ness CO,	Specific conduct-		
Date of collection	discharge (cfs)	(SiO ₂)	(Fe)	ctum (Ca)	nestum (Mg)	(Na)	stum (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (CI)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Hd	Color
Jan. 1-10, 1955	8.4	8.3	90.0	22	1.7	7.7	1.3	42	8	7.0	0.1	0.5	118	63	53	179	7.0	18
:	9.3	7.1	.04	23	2.5	7.2	1.0	43	34	10	0.	20.	119	19	32	182	6.9	22
:	32	7.9	.05	28	2.5	7.6	6.	36	42	10	0.	۰.	132	73	43	195	7.0	17
Feb. 1-10	36	5.1	.05	28	2.4	11	o.	31	51	12	-:	4.2	149	79	25	214	8.8	19
	34	4.0	90.	28	2.2	8.0	89	34	48	12	0.	2.5	143	79	21	212	8.8	32
Feb. 20-28	32	2.4	.0	8	2.1	8	∞.	98	\$	12	٥.	٥.	137	62	49	211	6.7	83
1.10	86	4	ä	96		9	4	77	49	Ξ	·	•	- 5	75	95	198	•	35
	94	6.4	8.8	22		4		34	36	:=	9	2:1	127	99	8	180	8.8	34
		4.6	12	22	1.5	4.	80	35	35	11	-	9.	123	62	36	174	6.7	\$
		3,5	15	52	1.5	4	ω.	46	31	10	0.	4:	122	69	31	181	7.1	45
		4.0	5	24	1.0	7.0	7	45	28	11	-:	1.2	122	49	22	179	6.9	45
Apr. 21-30		3.8	8.	23	1.3	8.8	1.2	48	21	12	٥.	ĸ.	119	63	92	174	4.9	42
	er o	-	13	28	07	2	1 3	Æ	21	=	c	~	135	74	21	192	7.1	22
	. 5	5.7		3 2				49	200	=	9	6	122	62	22	165	7.0	45
May 21-31	33	7.4	2 2	2 2	: -		œ	4	1	=	0		118	53	21	146	8.8	8
	8	4	2	2 2	4	9	0	22	=	10	9		111	29	14	155	6.9	20
	6.2	5.5	1	28	6	6.7	0.	72	=	9.5	0	1.0	123	74	12	180	7.0	45
June 21-30	170	9.9	1.	15	1.4	4.7	1.2	22	19	7.2	0.	1.2	107	44	24	119	6.3	140
July 1 10	ä	6	8	ş		4	۰	ą.	9	ď	-		199	Ş	7	755	œ	45
	9 5		5.0	9 0	:		•	2 8	2 :		: -	3 4	1	3 5	17	105	9	1
July 11-20	707		19:	3			• •	9 9	21	?	•	•	1 1	5 5	::	200		2
	24	2.0	62.	2	2.	4.0	-	D.F	=	0.0	?	0.4	211	3	7	136		3

a Organic matter present; sum of mineral constituents 61 parts per million.

NEUSE RIVER BASIN--Continued

TRENT RIVER NEAR TRENTON N. C. -- Continued

		Color	150	240	240	140	200	200	200	80	
		Hq	6.7	6.1	6.4	8.9	7.2	6.9	9.9		:
	Specific conduct-	ance (micro- mhos at 25°C)	101	57.7	0.99	69.4	7.07	93.4	71.7	151	
	ness CO,	Non- carbon- ate	10	7	9	4	9	80	1	24	
	Hardness as CaCO,	Calcium, Non- mag-carbon nesium ate	88	22	24	92	78	88	26	57	
	Dissolved solids	(residue on evap- oration at 180°C)	66	p84	c 93	!	d92	104	d88	117	
inued	į	Nitrate (NO ₃)	1.0	2.8	3.4	۶.	3.3	3.3	3.3	1.6	:
955 Cont	:	Chloride Fluoride (C1) (F)	0.0	0.	0.	o.	٥.	0.	0.	0.0	
eptember 1	:	Chlor ide (C1)	7.5	4.5	4.8	4.0	6.2	7.0	5.0	9.2	
in parts per million, January to September 1955 Continued		Sulfate (SO ₄)	7.5	3.6	3.2	4.1	3.4	7.0	2.9	22	
million,	Bicar-	bonate (HCO ₃)	34	18	22	22	56	37	30	40	
n parts per	Potas-	Stum (K)	0.8	1.0	1.2	1.4	1.0	œ.	1.2	0.9	
nalyses, in	:	(Na)	4.3	2.7	3.1	2.9	3.9	5.1	3.9	6.3	on. ion.
Chemical analyses,	Mag-	nesium (Mg)	1.0	6.	9.	ī.	9.	1.2	3.	1.4	s per milli s per milli s per milli
١	Cal-	cium (Ca)	14	7.2	8.8	9.6	10	13	9.6	20	36 parts 42 parts 48 parts
		(Fe)	0.34	.17	.18	.41	.30			0.15	stituents stituents stituents
		Silica (SiO ₂)	7.5	4.3	5.5	5.2	5.9	8.3	6.0	5.9	neral con neral con neral con
	Mean	discharge (cfs)	112	3,250	1,420	1,120	1,030	1,210	2, 490	383	ent; sum of mi ent; sum of mi ent; sum of mi
		Date of collection	Aug. 1-10, 1955	Aug. 11-20	Aug. 21-31	Aug. 25	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average	b Organic matter present; sum of mineral constituents 36 parts per million. c Organic matter present; sum of mineral constituents 42 parts per million d Organic matter present; sum of mineral constituents 48 parts per million.

NEUSE RIVER BASIN

NEUSE RIVER BASIN -- Continued

TRENT RIVER NEAR TRENTON N. C.--Continued

Temperature (°F) of water, January to September 1955

Once-daily measurement at 7 a.m.7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1				53	38	58	53	60	69	69	79	75
2 3 4			l	54	45	59	56	60	70	70	79	75
3			i	51	45	55	60	60	69	70	79	78
4			1	51	45	60	60	64	69	70	78	79
5			1	55	40	55	55	64	84	78	79	78
6			}	52	45	65	55	70	75	79	79	78
7				51	55	55	58	70	78	79	79	79
8				50	50	51	58	65	78	80	79	75
9		1	1	50	46	52	55	65	72	80	79	75
10			Í	49	45	52	68	64	72	79	78	75
11				45	54	60	63	70	72	80	79	74
12			1	44	43	60	65	70	75	81	73	74
13			1	43	33	62	65	70	75	80	74	74
14		ì	1	45	33	60	68	71	75	79	75	71
15				43	41	60	65	70	75	80	75	70
16				40	45	61	67	69	75	75	75	71
17		l	ļ.	40	45	62	65	69	70	80	75	72
18				40		61	65	68	70	79	76	70
19		1	1	41	42	56	68	68	74	75	76	
20				36	45	55	70	70	74	76	76	
21				37	45	55	70	70	74	75	79	
22				43	51	65	70	70	75	79	79	
23		1	ł	43	50	55	70	71	75	79	80	78
24	}	\	\	40	54	55	70	75	74	80	80	75
25			l	40	45	56	72	75	75	80	80	76
26				40	49	64	70	75	73	79	74	75
27		l		40	50	35	68	75	69	80	78	72
28				40	50	47	62	75	69	79	80	71
29		\	1	40		53	62	78	70	80	75	72
30		i		40		52	59	78	69	78	78	71
31				40		52		75		79	78	
er- ige				44	46	56	64	69	73	78	78	74

TRENT RIVER AT POLLOCKSVILLE, N. C.

LOCATION. --At bridge on U. S. Highway 17 in Pollocksville, Jones County, 0.4 mile upstream from Jones-Craven County line.

REANANGE RASA, (revised).-370 square miles.

RECORNS AVAILABLE. --Chemical analyses. January to September 1955.

Water temperatures: January to September 1955.

Water temperatures: January to September 1955.

Sectific conductances: Maximum, 1,200 pm, Jan. 19; minimum daily, 36.1 micromhos Sept. 22, 23.

Specific conductance: Maximum daily, 9,230 micromhos Jan. 10; minimum daily, 36.1 micromhos Sept. 22, 23.

REWARKS. --Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station.

22	
129	
September	
5	
Januar	
aillion,	
ern	
parts p	
s	
nalyses.	•
12	
ä	
ਹ	

	Color	12:18:18	32 32 34 34 35 35 36 36 37	24 50 37 31	6 19
	Hď	8.5.7.7.8.8	7.0 7.0 7.0 7.0	6.7 6.9 7.0 7.1	8048685
	Specific conduct- ance (micro- mhos at 25°C)	8,470 2,400 3,700 9,250 598 265	222 225 257 218 211	219 213 229 229 221 215	215 1,770 1,630 4,710 237 237
	Non- carbon- ate	949 544 257 26 1,120 28	28882	21 19 16 17 17 13	18 160 147 477 27 12
	Hardness as CaCO ₃ Calcium, No mag-car nestum a	1,040 630 376 114 1,200 116	88 99 98 84 7 48	889688	240 240 552 94 82 48
	Dissolved solids (residue on evaporation at 180°C)	5, 080 213 163	143 142 159 141	139 136 144 141 137	136
	Nitrate (NO ₃)	8:1	1:2	9. 9. 11. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	1:0
ber 1955	Fluor ide (F)	1. 0 0	0,00,40	404000	6111116
y to Septem	Chloride (C1)	2,750 1,850 720 3,050	13 12 12 11	11 12 13 10 10	10 460 420 1,420 61 21 7.8
Chemical analyses, in parts per million, January to September 1955	Sulfate (SO4)	408 123 23 28 28 28	8 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	23 19 17 15 11	12 68 189 18 12 11
ts per mil	Bicar- bonate (HCO ₃)	105 105 107 107 100 81	88 75 75 70	98 4 8 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	90 91 88 82 47 85 85
ses, in par	Potas- sium (K)	1.5	1.0	1.0 1.0 1.0 1.1 1.0	1.8
ical analys	Sodium (Na)	1,520	8. 11 8. 2 8. 2 8. 0.8	2.2.8.8.2.8 8.4.2.2.4.8	2
Chem	Mag- nestum (Mg)	198 109 50 3.8 255 4.9 2.8	1.9	1.5	11.5 31 30 102 4.2 1.9
	Cal- clum (Ca)	88 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	22233	2888488	22 4 8 5 1 5 8 1 5
	Iron (Fe)	0.04	11200	00: 00: 00: 00: 04:	8;;;;;;;;;
	Silica (SiO ₂)	6.0	2.00.7. 2.00.05. 3.1.00.05.	7.7.4.8.6. 7.7.7.1.8.6.	6.1
	Mean discharge (cfs)				
	Date of collection	Jan. 1-8, 1955 Jan. 9-10 Jan. 11-13 Jan. 14-18 Jan. 20 Jan. 20	Feb. 11-19 Feb. 20-28 Mar. 1-10 Mar. 11-20 Mar. 21-31	Apr. 1-10. Apr. 11-20 Apr. 21-30 May 1-10 May 11-20 May 21-31	June 1-7 June 8-10 June 11-13 June 14-17 June 12-23 June 21-23

July 15-20, 1955. July 21-26, 29 July 27-28. July 30	6.1.1	0,16	88 82 21	1.0 .7 16 48	6.6.	e,e.	41 52 64 66	10 10 106	7.5 8.2 248 690	00:11	1.3	112	47 54 141 291	13 11 88 237	124 140 972 2,460	6.9 7.1 6.8	8111
Aug. 17-18, 22, 24-25 27-28 Aug. 19-21, 23, 26	4.8	.33	35	1.0	3.8	3.2	28	4.1	8.5 128	<u>.</u>	1.7	88 t	109	52	71.5 555		220 160
Sept. 1-10	5.5 3.8	.46 .86 .45	9.2 14 6.2	r. 6. 6.	2.22	1.1	25 36 20	4.3 6.0 2.8	6.0 8.0 4.0	10.0	1.1	b81 c 101 d66	26 37 19	600 0	73.3 98.7 50.8	6.5 5.5 5.5	188 180 180 180
Average	1	;		:	:	:	:	1	1	l	1	:	;	;	ŧ	ł	;
a Organic matter present; sum of mineral b Organic matter present; sum of mineral c Organic matter present; sum of mineral d Organic matter present; sum of mineral		constituents 45 constituents 45 constituents 61 constituents 33	42 parts per r 45 parts per r 81 parts per r 33 parts per n	parts per million. parts per million. parts per million. parts per million.													

TRENT RIVER AT POLLOCKSVILLE, N. C .-- Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1			1	60		53	59	65	74			
2 [I	1	54		54	60	68	77			74
3])	52		52	61	69	76			75
4			1	54		54	60	66	79			75
5		ł	l	51	{	53	61	67	77			75
6		l		53		54	57	66	78			75
7		1	ļ	51		56	59	70	77			75
8		1	ì	51		55	60		70		l	74
9		ł	1	51	l	56	58	69	68			74
10				50		58	59	66	71			73
11				47		60	55	68	71			73
12				48	45	58	61	65	69			73
13		1	}	47	45	56	67	70	69		ł	71
14		1	1	49	45	59	69	72	75			70
15		1	ĺ	48	53	59	66	71	76	78		70
16		1		49	54	60	69	71	77	82		70
17		1	}	47		59	72	69	76	84	82	71
18		1	ì	45	42	58	74	68	77	80	88	70
19		1	1	44	43	59	69	68	79	81	81	
20			l	44	52	60	70	70	76	76	79	
21		1	Į	45	53	62	67	71	74	75	84	
22		1	j	44	53	64	69	69	77	81	81	75
23		1	1	43	52	66	66	72	80	83	82	74
24			1	42	50	55	66	73	74	7€	78	73
25				49	49	57	70	70	76	77	78	73
26		Í		49	49	60	72	70	74	79	77	74
27			ì	49	52	60	73	69	75	78	79	73
28		1	1	49	53	61	75	78	73	83	78	73
29			[49		59	75		76	79	i	73
30		Į	I	49		56	66					74
31		L _	1_	50		57						
ver- age				49		58	66	69	75			73

MISCELLANEOUS ANALYSES OF STREAMS IN NEUSE RIVER BASIN IN NORTH CAROLINA

			- 1	Cher	nical anal	yses, in p	arts per m	Illion, wat	ter year Oc	Chemical analyses, in parts per million, water year October 1954 to September 1955	to Septembe	r 1955	Dissolved	Hardness	ssa	Specific		
Discharge Silica fron Cal- Mag- (cfs) (SiO ₂) (Fe) (Ca) (Mg)	Iron Cal- (Fe) Cium	Iron Cal- (Fe) Cium		Ma nesi (Mg	g.	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	solids (residue on evap- oration at 180°C)	Calcium, Nage-	on- the	conduct- ance (micro- mhos at 25°C)	Hd	Color
							ENO RIV	er at hi	ENO RIVER AT HILLSBORO									
18.8 - 15 0.07 4.8 1.5 19 1706 6.0 2.2	0.07 4.8 6.0 .06 6.0	07 4.8 6.0 06 6.0		1.5		9.4	0.7	22 32 29	6.2 6.2	3.5 8.8 8.8	0.0	0.3 1.6	52 78 a67	18 24 24	000	69.7 79.1	7.0 6.8 6.7	2 : 2
-		-					FLAT R	FLAT RIVER AT BAHAMA	ВАНАМА									
37.9 4.2 1.6 47 15 0.01 4.5 1.4	5 0.01 4.5	4.2	21.22	1.6		4.1	1.5	25	2.1	3.8	0.0	0.3	a45	17	00	60.4	7.4	15
							DIAL CR	DIAL CREEK NEAR BAHAMA	BAHAMA									
1.90 1.15 21 0.14 4.0 1.6	0.14 4.0	3.4	-	1.2		5.4	1.4	78 78 78	8.4	3.5	0.1	1.5	a 54	13	00	66.8 59.2	7.2	23
						FLA	T RIVER	AT DAM,	FLAT RIVER AT DAM, NEAR BAHAMA	АМА								
11 4.0 1.1 50 6.5 0.06 3.1 .8	5 0.06 3.1 .8	06 3.1 .8	1.1			1.7	1.7	4 4	6.6	1.8	0.0	2.3	74 a 25	41	0 3	59. 1 37. 2	6.3	40
						×	EUSE RIV	ER NEAR	NEUSE RIVER NEAR NORTHSIDE	崗								
126 6.6 1.8 119 12 0.22 6.1 1.7	0.22 6.1	22 6.1	-	1.8		8.6	2.4	27 26	7.0	7.2	0.1	3.1	80 a62	24	2 1	101 98.0	6.5	9
						ğ	ABTREE CI	REEK NEA	CRABTREE CREEK NEAR RALEIGH	щ								
5.02 15 0.03 6.0 2.4	0.03 6.0	6.0		1.9		5.6	1.8	38	3.2	4.0	,0.1	0.0	a 58	23	00	77.4	6.6	9
						×	NEUSE RIVER	ER NEAR	NEAR CLAYTON									•
569 4.8 1.7 4,940 16 0.06 3.2 .6	0.06 3.2	3.2		1.7		27	1.1	22	7 8.3	37		2.1	75 a 101	11	- 2	89. 5 226	6.5	88

MISCELLANEOUS ANALYSES OF STREAMS IN NEUSE RIVER BASIN IN NORTH CAROLINA -- Continued

		Color						180		120		23		0
		Hg.		5.5		6.8		6.0		5.9		5.7 6.1 6.0		7.2
	Specific conduct-	ance (micro- mhos at 25°C)		50.5 67.8		62.6 52.5		49.8		54.4		62.0 73.0 65.1		67.2 65.7
	988	Non- carbon- ate	ı	O 10		00		00		0 80		∞ ∞		00
	Hardness as CaCO,	Calcium, mag- nesium		10		16		တ ထ		13		8 4 4		11
panu	Dissolved	(residue on evap- oration at 180°C)		53 a 29				a 32	i	62 a 39		61 a41		
55 Conti		(NO ₃)		0.0		1.5		0.1		0.0		1.4		2.6
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	:	Fluor ide (F)						0.0		0.0		0.0		
1954 to Sep		Chloride (C1)		6.2	Ω	3.2		6.2		5.0		5.2 6.8 7.0	×	6.0
ar October	;	(SO,)	MIDDLE CREEK NEAR CLAYTON	4.0	MIDDLE CREEK NEAR SMITHFIELD		BLACK CREEK NEAR FOUR OAKS	1.6	LITTLE RIVER NEAR PRINCETON	8 4 .	DSBORO	16 12 9.6	FALLING CREEK AT FALLING CREEK	8.0
, water year	Bicar	bonate (HCO ₃)	EEK NEAR	12	EK NEAR S	23	K NEAR F	15	GR NEAR P	11 21	STONY CREEK AT GOLDSBORO	60 00 1∼	AT FALL	91
er million	Potas-	stum (K)	IDDLE CR	2.5	OLE CREE		ACK CREE	1.7	TLE RIVE	3.0	ONY CREE	1.0	NG CREEK	
in parts p	;	(Na)	Σ	3.0	MID	*	BI	5.8	LIT	2.6	S	4.3	FALLI	
analyses,	Mag-	nesium (Mg)		1.1		1.5		0.4		1.0		1.2		2.2
hemical		cium (Ca)		3.0		3.6		1.6		3.7		6. 4. 4. 5. 6. 6.		89 89 22 23
Ŭ	ļ	ron (Fe)						0.31		0.46		0.37		
	;	Silica (SiO ₂)		4.8				6.9		=		9.5		
		Discharge (cfs)		1,050		0.225 36.0		8.2		178 1,070		0.18 .938		1.88
		Date of collection		Feb. 1, 1955		Oct. 6, 1954		June 2, 1955		Feb. 1, 1955		Oct. 7, 1954 June 2, 1955		Oct. 8, 1954 Sept. 30, 1955

a Sum of determined constituents..

NAHUNTA SWAMP NEAR SHINE

1 .				1						
88		160								
6.1		5.8			9.9.6. 9.4.0				க் க க க	
112 86.7		101 48.6		930	1,740 8,370 12,500 170		483 8,010 2,980		15,900 15,900 21,900	3,360
20		13		8 5	157 976 1,440		1, 140 365		1,920 1,920 2,730	2,910 325
26		20 13		141	1,050 1,520 1,520		1, 140 368 16		1,950 1,970 2,780	2,970 338
88 a 60		85 a31								
1.3		2.1						-		
0.0		0.0								
11, 7, 5	ERTON	9.8	BERN	225	2, 650 4, 300 20	MPIA	2,550	MPIA	5,830 5,890 8,220	8,760 1,000
26	AT HOOK	21 5.9	NEAR NEW	67	376 584 12	K AT OLY	34 368 106	NEAR OLY	830 826 1, 270	1,240
2 8	CONTENTNEA CREEK AT HOOKERTON	9 01	BATCHELDERS CREEK NEAR NEW BERN	28	8 8 8 9 8	UPPER BROAD CREEK AT OLYMPIA	4 b.08 4	UPPER BROAD CREEK NEAR OLYMPIA	51 59 60	71 16
1.8	ONTENTN	2.8	CHELDER			PPER BR		ER BROA		
4.6	o	2.2	BAT	-		Þ		dan		
1.3		1.6		:	187 292 1.9		165 82		562	605 67
6.8		5.5		;	112 128 18		 184 13		.: 187	191 26
0.70		0.49								
17		6.3								
34.1		384 6,030								
Feb. 1, 1955		Feb. 3, 1955		Sept. 15, 1954	Nov. 10		Sept. 15, 1954 Nov. 5 Dec. 1 Feb. 18, 1955		Sept. 15, 1954 Oct. 1 Nov. 5	Dec. 1 Feb. 18, 1955

a Sum of determined constituents. b Acidity as H+.

NEUSE RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN NEUSE RIVER BASIN IN NORTH CAROLINA --Continued

		SOUTH	ATLAN	TIC	SLOE	PE BAS	INS,	JAMES	RIVER	TO S
		Color								
		Hď		4. 7	5.6		6.7	7.2		
	Specific conduct-	ance (micro- mhos at 25°C)		13, 100	16, 400		19,800	23,300 23,000 19,800		
	Hardness as CaCO ₃	Non- carbon- ate		1,680	2,150		2,450	2, 780 2, 970 2, 470		
	Harc as C	Calcium, mag- nesium		1,680	2,170		2,510	2,850 3,040 2,530		
nued	Dissolved solids	(residue on evap- oration at 180°C)								€.
55Conti		(NO ₃)								CAROLIN
ember 19	i	Fluoride (F)								NORTH
Chemical analyses, in parts per million, water year October 1954 to September 1955Continued		Chloride (C1)	BORO C	4,540	5, 790	BORO d	7,460	8,750 9,000 7,520		MISCELLANEOUS ANALYSES OF STREAMS IN NEW RIVER BASIN IN NORTH CAROLINA
r October	:	Sulfate (SO ₄)	r grants	705	811	R GRANTS	1,050	1,270 1,250 1,100	SIN	EW RIVE
, water yes	Bicar-	bonate (HCO ₃)	GOOSE CREEK NEAR GRANTSBORO C	2	3 8	GOOSE CREEK NEAR GRANTSBORO d	69 81	28 E 17	NEW RIVER BASIN	EAMS IN N
er million	Potas.	stum (K)	GOOSE C			GOOSE C			NEW	OF STR
, in parts 1		(Na)								ANALYSE
analyses	Mag	nesium (Mg)		1 1	403		::	558 619 526		LANEOUS
Chemica	•	cium (Ca)		1 1	204		11	223 199 148		MISCEL
		(Fe)								
		Silica (SiO ₂)								
		Discharge (cfs)								
		Date of collection		Sept. 15, 1954	Nov. 5. Feb. 18, 1955		Sept. 15, 1954	Nov. 5 Dec. 1 Feb. 18, 1955		

						z	NEW RIVER	NEAR GI	UM BRANCH								
Feb. 2, 1955 30 Aug. 24 367	367	5.2	0.23	32,	5.3	3.4	1.7	65	30	11 5.0	0.0	0.2	143 a 53	85	32	216 99.2	6.7
a Sum of determined posstituer	constituents																

140

bum of determined constituents.

a Sum of determined constituents.

c Collected at bridge on comy road, 2½ miles southwest of Grantsboro.

d Collected at Fuller, 7½ miles southwest of Grantsboro.

CAPE FEAR RIVER BASIN

HAW RIVER NEAR BENAJA, N.

LOCATION. --Temperature recorder at gaging station, 200 feet upstream from site of old High Rock Mill, 500 feet upstream from highway bridge, half a mile, upstream from county line, 6 miles downstream from Troublesome Creek, and 6 miles east of Benaja, Rockingham County.

DRAINGEARRA. --168 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1952 to September 1953, July 1954 to September 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 80°F July 23, 28°B minimum, freezing point Dec. 7-9.

EXTREMENS 1954-55. --Water temperatures: Maximum, 84°F Aug. 2, 1952; minimum, freezing point Dec. 7-9, 1955.

REWARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955 /Continuous ethyl alcohol-actuated thermograph/

1	. 1	. 1																															١	ı
	September	min	72	89	89	89	89	69	69	69	89	67	89	89	99	64	63	63	64	99	67	67	67	68	68	89	67	65	62	63	64	65	:	67
	Septe	max	73	72	89	89	69	69	20	20	69	69	69	69	89	99	65	99	67	67	67	89	69	89	89	89	89	67	65	65	99	67	:	89
	August	mim	74	73	75	74	75	74	75	74	74	73	73	7.5	71	20	20	7.1	12	7.1	12	7	72	73	74	72	71	20	89	20	7	72	73	7.2
	Aug	max	77	79	79	78	7.8	78	78	7.5	22	74	74	73	73	72	7.	- 12	17	11	1	72	73	74	74	74	72	7.2	7	72	73	73	73	74
	July	min	89	20	12	72	72	72	73	73	73	73	73	72	11	11	7.1	7.5	7.4	75	75	94	7.4	74	75	92	75	75	75	15	7.6	75	7.4	7.3
	P.	max	73	75	16	77	74	74	16	74	16	74	74	74	72	7.1	72	7.5	92	7.8	44	48	78	79	8	4	7.8	78	78	8	7.8	16	16	16
	June	min	63	63	63	62	62	64	89	99	63	62	63	99	65	64	63	62	63	65	65	65	67	89	89	69	20	20	89	99	99	67		65
	n r	max	89	67	67	99	89	70	7.1	69	99	63	99	99	99	65	65	99	89	99	99	2	7.2	74	2	20	72	7.1	2	20	40	72	-	89
	May	min	9	9	29	61	63	63	9	61	61	9	63	65	62	61	61	63	62	61	61	62	65	99	99	67	69	69	69	69	20	70	67	64
	M	max	63	62	62	65	99	65	64	64	65	99	67	67	99	62	62	62	62	63	64	99	67	67	67	69	69	69	69	1	72	72	20	99
ή <u></u> /	11.	min	49	22	22	54	53	53	55	26	54	22	09	26	29	62	62	49	65	99	64	67	89	67	99	99	64	61	29	29	28	29	-	9
r mogra	Apr11	max	53	23	26	22	54	55	61	29	29	63	61	19	63	63	65	55	67	67	67	69	69	69	89	- 67	67	64	61	28	9	61	;	62
nen me	rch	min	48	23	51	51	54	57	22	49	48	20	51	54	28	28	55	55	53	53	48	47	48	51	22	20	27	20	45	43	4	45	47	51
101-011	March	max	53	53	53	24	29	29	57	22	20	27	54	28	29	29	28	55	26	54	54	48	51	28	28	54	54	27	20	42	44	48	20	54
y atto	ıary	min	33	35	38	35	33	35	39	43	40	41	42	36	34	34	34	88	4	43	42	42	43	44	48	\$	43	43	44	46	:	;	-	40
200	February	max	35	33	39	38	35	39	43	43	43	42	44	44	36	34	38	40	44	44	43	44	44	48	3	20	46	44	46	48	:	;	:	42
Continuous ethyt attomot attuated thermographic	ary	min	43	43	44	44	45	46	44	41	4	42	41	39	38	36	36	60	36	36	34	34	34	34	36	36	36	36	36	35	5.	34	33	38
7	January	max	44	45	45	45	42	48	49	44	42	42	42	41	39	38	38	39	38	36	36	35	34	36	36	36	36	36	37	37	£.	35	34	40
	per	min	40	40	36	35	36	36	32	32	32	35	34	34	34	36	38	33	38	39	9	37	34	33	33	33	35	35	35	37	4	48	44	36
	December	max	41	40	40	36	36	36	36	32	35	35	35	34	36	38	38	38	39	42	42	\$	37	34	33	36	36	35	37	4	84,	49	48	38
	nber	min	46	46	43	42	43	44	42	42	42	42	42	42	44	43	44	45	46	49	21	54	51	42	45	44	44	43	41	4	42	4	:	44
	November	max	47	46	46	5	45	44	44	44	44	44	44	44	46	45	45	47	6	21	54	24	54	5	4	45	44	44	43	4	42	42	-	46
	ber	mim	89	69	67	99	99	89	29	22	54	26	28	9	61	64	09	29	26	54	25	22	51	20	49	49	20	20	25	22	22	27	47	24
	Octobe	max	7.5	23	72	22	72	14	7	29	9	62	64	99	67	99	99	09	29	26	22	24	22	2	3	22	22	53	26	29	20	55	51	19
	,ac	Day	1	Z				9	T	8		10	11					9	17	18.			21		2.4	95		26	27	28		0	1	Average
		1										~	-		٠,	-	-	-		7	٠,	4	22.5	4 6	4 6	9 6	4	8	~	~	~	m c	~	-

CAPE FEAR RIVER BASIN -- Continued

CAPE FEAR RIVER AT LILLINGTON, N. C.

bridge on U. S. Highway 15A, 1,800 feet downstream from Norfolk Southern Railway bridge, 0.5 mile north of Lillington, Harnett County, and 1 mile downstream from Neill Creek. . -- At gaging station at

,440 square miles, approximately DRAINAGE AREA, --3

RECORDS AVAILABLE. The decident analyses is November 1944 to October 1945, October 1954 to September 1955.

Right for the properature is November 1944 to October 1945, October 1954, October 1955, October 1955.

RIGHTRANES, 1954-55.—"Issolved solids: Maximum, 176 ppm Oct. 11-15; minimum, 51 ppm Oct. 11-15; minimum, 52 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 34 ppm Oct. 11-15; minimum, 36 ppm Oct. 11-15; min

	gen med	Fil- tered	5.2	4.9	1		: :	9.6	;	7.1	5	: 1	7.5	5.5	4.8	 4	9.6	7.9	7.3	6.9	4.	70 C	0
	Oxygen	Unfil- tered	6.9	8.4	1	= -	; ;	12	;	12	9	;	13	8.6	2	er (×0 ×0	==	14	=	a :	2	
		Color	18	12	1 ;	8 8	3 ;	87	;	34	33	; ;	32	8	\$	£;	≅	22	8	81	27	8 8	3
	-	H.	7.7	7.6	2.0	5.4	6.7	6.9	7.2	6.9	7 1	6.9	6.4	6.8	6.9	44 6	7.7	7.1	6.5	6.7	9.1		_ :
	Specific conduct-	(micro- mhos at 25°C)	268	241	108	89.2	176	168	175	124	123	232	8.62	90.1	113	123	707	74.7	57.7	80.3	95.2	80.60	22.7
	ness ICO,	Non- carbon- ate	0	•	<u>.</u>	4.0		0	0	•	6	11	4	60	~	ς,	-	4	63	0	en (N 6	• •
955	Hardness as CaCO,	Calcium, -mag- nesium	ಜ	34	52	2 2	25.	ន	54	22	25	30	17	19	24	2	≈	81	14	16	2	61	02 -
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids	on evap- oration at 180°C)	151	176	11	2 2	3 :	111	;	6 8	æ	; ;	63	20	78	82	20	19	21	64	67	8	29
1954 to S	Nitrate	(NO ₃)	8.0	6.0	2.1	ė, s	. 60	1.5	8.8	1.5	4	0.1	1.3	1.6	1.6	= :	o.	63	-:	o.	= '	ų,	•
October		ride (F)	1.2	<u>ښ</u>	: '	-i e	: ;	e.	;	œ.	4	: ;	63	~!	~?	.; ·		63	=:	-:	e.		N3.
er year	Chlo-	(C1)	28	41	0.6	0 F	15.0	14	16	2	5	\$	6.5	8.8	2	12		6.5	5.0	7.5	2.2	0.6	7.
illion, wa	Sulfate	(*os*)	14	6.3	= '		12	19	14	14	13	14	9			13	==	9.2	8.8	9.4	9.4	× 0	0.8
ts per m	Bicar-	Donate (HCO ₃)	83	99	6 :	2 5	3 4	42	43	8	86	19	16	2	53	35	R	17	14	8	77	2 2	5 7
es, in par	Po- tas-	Sium (K)	4.0	4.5	1	20.0	; ;	3.2	;	8.8	0	: :	1.8	1.8	9.1	9.1	0.1	1.1	1.2	1.5	1.2	S .	1.2
cal analys	Sodium	(Na)	44	45	;;		;	23	1	14	14	: 1	7.1	9.1	12	22	=	7.8	6.6	12	9.2	æ ε	· · ·
Chemi	Mag- ne-	Sium (Mg)	3.2	2.4	2.0	4.0		2.0	1.9	1.8	- 7	8	1.3	1.6	2.6	2.3	e.	1.7	1.3	1.3	9.	1.7	
	Cal-	(Ca)	6.2	9.6	6.7	0.4	*	9.0	6.4-	6.0	4	5.7	4.8	5.1	5.2	e.	4. 80	4.4	3.4	4.2	5.5	6.4	4 .
		(Fe)	0.03	.02	11	.0.	3 1	97.	:	8.	70	: :	9.	<u>.</u>	<u>5</u>	2.5	8	.04	.0	<u>ق</u>	.02	5,8	
		(S1O ₂)	2.2	12	1	9.0	: :	=	!	13	4	;	13	=		8	=_	5.5	8.2		13		
	Mean	discharge ((1,560						1,500						4,550	
	:	Date of collection	Oct. 1-10, 1954	Oct. 11-15	Oct. 16-20	Not. 21-31	Nov 10	Nov. 11-20	Nov. 21-23	Nov. 24-30	1-8	Dec. 7-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

644.644.6 66.664.84.8	4.72 4.4.72 5. 8 8.1.8 9.8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6.7 6.8 110 111 6.2 5.7 6.4
8.8 8.8 8.8 4.6 9.0 1.0 1.0	4.8 6.6 6.2 7.2 7.2 11	8 6 6 1 1 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6
120023308	31 32 1 38 5 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7 8888821
0.000.0	22.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.7.	66.000000
102 115 63.0 90.1 106 134 130	123 137 170 111 128 70.7 115 69.4	60.2 135 161 65.5 60.0 68.3 68.3 92.3
00 00 0000	0000000	
2 2 2 2 2 3 8 8 1 8 2 1 8 2 1 8 2 1 8 2 1 8 1 8 1 8	26 26 23 23 23 21 21 14 16	14 23 22 16 16 15 15 17 20
71 72 68 72 85 87	85 103 73 73 83 	201 102 55 55 54 62 69 78
122722	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2.1 2.1 3.1 3.1 4.4 1.0 1.0 1.2
	410004 400	1444444
8.0 9.0 4.0 17.2 10 9.0	10 11 14 14 9.0 12 8.0 9.0 9.0	5.5 116 4.0 3.8 5.0 7.5
8 8 8 8 7 4 8 8	0487-04844	6 - 8 & 4 4 4 8 8 7 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
05 2 8 2 8 2 4 4 8 8 4 4 8 8 8 4 4 8 8 8 4 4 8	8 4 5 8 8 8 2 2 2 2 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	18 42 49 49 49 18 18 30 31
121111111	2.2.2.1.2 2.4.2.1.2 2.4.2.1.2 2.4.2.1.2 2.4.2.1.2 2.4.2.2.1.2 2.4.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	1.2.2.1.1.1.8.8.8.4.1.6.1.6.1.6.1.0.2.
10 13 4.6 8.6 17 17	13 16 22 14 17 17 1,8 7,8	22 28 20 20 20 20 20 30 44 40 81 81
1.1.2.2.2.1.1.2.2.2.1.2.2.1.2.1.2.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.1.2.2.2.2.1.2	222212	2 4 2 2 1 2 2 2 4 2 2 1 2 2 2 2 2 2 2 2
7. 1. 4. 4. 6. 7. 4. 5. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	8 8 8 4 8 9 2 2 8 4 4 4 8 8 9 9 8 9 8 8	0.000444400 C.00C00141
0.09		00.00 0.00 0.00 0.00 0.00
8.7 111 14 111 6.7 9.3 2.4	12 6.7 7.6 7.7 1.7 1.7 1.8 9.5 8.9	11 9.1 10 10 12 12 9.6
	305 340 1,030 550 307 1,240 2,580 2,860 1,220	1 1
Apr. 1-10, 1955 Apr. 11-15 Apr. 11-20 Apr. 21-30 May 1-10 May 11-20 May 21-23, 20-31 May 24-25	June 1-10 June 1-12, 26-28, June 21-22, 26-28, June 23-25, 29-30, July 1-9, 10 July 19-3, 11-20 July 11-13, 17-20 July 14-116 July 21-31	Aug. 1-2. Aug. 3-10 Aug. 11-15 Aug. 11-25 Aug. 21-31 Sept. 1-10 Sept. 21-30 Average

CAPE FEAR RIVER BASIN -- Continued

CAPE FEAR RIVER AT LILLINGTON, N. C.--Continued

Temperature (*F) of water, water year October 1954 to September 1955

				/One	ce-daily n	neasurem	ent at 8 a	.m <u>.</u> /				
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	52	44	45	34	50	49	62	74	77	78	77
2	76	53	43	47	37	47	52	61	74	78	80	75
3	76	48	42	46	37	46	52	62	73	80	83	74
4	76	47	40	45	35	46		65	72	82	81	72
5	76	50	40	45	37	50	54	67	74	81	84	72
6	78	50	39	46	40	54	54	67	76	79	83	72
7	72	48	38	46	45	55	56	67	78	· 81	85	73
8	66	48	35	41	45	53	54	67	77	82	86	74
9	65	48	36	43	44	52	55	67	74	77	84	73
10	66	48	38	45	44	50	68	67	71	78	82	73
11	68	46	36	44	43	52	60	72	74	79	82	74
12	70	46	35	42	43	55	58	68	74	79	77	74
13	70	58	37	41	40	55	60	72	74	77	74	74
14	72	49	38	38	36	55	62	70	74	75	80	71
15	72	50	38	39	35	55	60	70	72	76	80	73
16	62	52	39	39	36	55	60	70	72	78	77	74
17	60	54	38	36	36	54	62	71	75	81	74	72
18	59	55	36	37	40	54	61	71	76	82	74	74
19	59	58	40	35	39	53	62	70	73	84	75	73
20	53	57	40	34	39	50	65	73	73	85	75	71
21	54	52	39	34	40	50	67	75	74	82	76	73
2 2	55	54	35	36	43	53	67	77	75	80	77	75
23	55	52	35	35	46	49	66	75	77	81	77	75
24	55	52	37	35	45	49	69	72	78	81	77	75
25	55	48	35	34	43	51	69	72	78	82	77	75
26	55	47	35	34 35	42	54	65	75	- 78	82	71	72
27	57	45	39	35	44	44	65	74	70	83	76	70
28	60	46	40	35	44	46	61	77	73	85	79	72
29	60	47	41	35		47	60	74	76	86	78	73
30	58	44	46	35		47	62	75	77	83	77	74
31	55		42	34		47		76		80	79	
Aver- age	64	50	39	39	40	51	61	70	75	81	79	73

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CAPE FEAR RIVER BASIN -- Continued

LITTLE RIVER AT LINDEN, N. C.

LOCATION.--4t gaging station at bridge on U. S. Highway 154, 1.6 miles west of Linden, Cumberland County, 2 miles upstream from Stewart Creek, and 4 miles upstream from mouth.

44 miles upstream from mouth.

DRAINGE AREA.-460 square miles.

RECORDS AREA.-460 square miles.

RECORDS AREA.-Chemical analyses: October 1954 to September 1955.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Chemical analyses, in parts per million, water year October 1954 to September 1955

		Color	30	37	32	17	;	22	20	21	32	23	65	38	20
		甁	4.6	2,5	6.7	5.3	6.0	6.0	5.2	6.0	5.3	6.2	5.5	5.7	5.6
	Specific conduct-	ance (micro- mhos at 25°C)	49.1	62.9	35.0	32.4	33.8	37.7	35.1	40.3	37.5	35.9	32.8	34.1	30.0
	ness CO ₃	Non- carbon- ate	4	4	-	4	0	-	~	7	8	1	2	e	2
-	Hardness as CaCO ₃	Calcium, mag- nesium	7	7	ø	2	4	ß	4	9	7	ß	ß	9	g
	Dissolved solids	(residue on evap- oration at 180°C)	41	36	38	34	36	30	a 31	p33	c33	39	c 44	d 39	e 41
		(NO ₃)	2.1	6.	r.	6.	10		.7	1.4	1.0	6	4.	ø.	ıs.
	:	(F)	0.1	۰.	0.	°.	;	-	•	•	0.	0.	0.	0.	٥.
		(C1)	2.5	4.5	3.8	4.5	4.0	3,5	3.5	3,5	4.0	4.0	3.0	3.8	3.5
		(80°)	6.4	4.8	5.4	5.3	4		3.2				2.7		
	Bicar-	bonate (HCO ₃)	4	4	6	4	9	ĸ	es	en	~1	ıo	4	4	ιO
	Potas-	sium (K)	1.4	1.1	1.3	e.	ł	9.	ω.	9.	₩.	1.2	8.	9.	∞.
· · · · ·		(Na)	3.5	3.8	8.9	3.0	ŀ	2.9	2.6	2.5	2.6	3.0	2.3	2.4	2.4
	-деу	nesium (Mg)	9.4	∞.	۰.	₹.	8	4.	۳.	۳.	e.	4.	₹.	٤.	₹.
,	Cal-	cium (Ca)	2.2	1.5	2,2	2.2	1.2	1.4	=	2.0	1.0	1.4	1.4	1.6	1.6
		(Fe)	90'0	8	8	90.	:	.03	Ξ.	8	. 12	.13	. 22	. 13	. 15
		(810,)	7.1	8.9	4.0	5.5	;	5.5	8.8	4.1	 	8	5.0	6.2	7.1
	Mean	discharge (cfs)				579			_	1,150	242		169		
		Date of collection	Oct. 26, 1954	Nov. 19	Dec. 15	Jan. 21, 1955	Feb. 1	Feb. 15	Mar. 15	Apr. 15	May 16	June 21	July 15	Aug. 15	Sept. 15

a Organic matter present; sum of mineral constituents 17 parts per million. b Organic matter present; sum of mineral constituents 19 parts per million. c Organic matter present; sum of mineral constituents 18 parts per million. d Organic matter present; sum of mineral constituents 21 parts per million. e Organic matter present; sum of mineral constituents 22 parts per million.

CAPE FEAR RIVER BASIN -- Continued

CAPE FEAR RIVER AT LOCK 3, NEAR TARHEEL, N. C.

gaging station, I mile downstream from county line, 7 miles north of Tarheel, Bladen County, 9 miles LOCATION.--At lock 3, 100 feet downstream from gaging station, 1 mile du upstream from Phillips Creek and at mile 95.
BRAINGE AREA.--4, 810 square miles, approximately, RECARIS.4.-4, --Chemical analyses: October 1946_to_September 1947,

MECOROR ANTIABLE.—"A condition many of the condition of the condition of the condition many of the condition

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Chem

	en ned	Fil- tered	4.4	0.0	9.0	4.7	4.3	ŀ	7.1	7.6	6.9	5.5	5.8	4.	7.0	8.8	5.7	4.7	7.3	6.7
i	Ожувел	Unfil- tered	5.4	ន:	1 4	:=	13	;	11	14	9	11	9	=======================================	12	13	6.7	!	9.3	8.1
		Color	17	4.	2 2	ន	37	1	æ	8	32	32	8	45	\$	22	8	23	ĸ	52
		Hd.	6.7	60	8.5	9.9	7.1	8.8	6.7	6.7	6.4	7.6	9.9	6.5	6.7	9.9	8.8	6.7	7.4	7.0
	Specific conduct-	(micro- mhos at 25°C)	104	114	20.0	75.6	124	70.7	105	68.4	63.9	74.6	86.9	15.0	62.1	51.2	65.5	83.3	72.2	72.4
	ness ICO ₃	Non- carbon- ate	0	0 1	- 10	~	0	•	87	ß	4	67	-	2	4	က	0		-	81
200	Hardness as CaCO,	Calcium, mag- nesium	16	13	12	13	18	18	18	15	13	13	15	14	13	11	14	11	14	15
mentical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids	on evap- oration at 180°C)	26	8	8 5	8	87	1	74	28	25	25	82	86	219	84	24	29	24	25
m Feet	Nitrate	(NO3)	1.5	2.0	2.5	1.0	1.4	1.5	1.2	1.0	÷	1.1	1.0	1.1	7.	ĸ.	œ.	1.5	'n	۲.
Ctomer	Fluo-	ride (F)	4.0	4.	: 0	0	'n	:	4.	~	-:	7	7	Ξ.	-:	•	Ξ.	2	7.	Ξ.
ner year	Chlo-	ige CD	12	12		8	13	15	11	0.9	6.5	7.2	0.6	æ.	6.2	4.5	8.8	7.0	6.0	6.0
IIIOIII, We	Sulfate	(°OS)	7.1	2.0	0 00	9	14	13	12	9.4	8.8	9.6	9.6	9.3	8.0	8.1	7.9	8 9.	7.7	7.3
re ber mi	Bicar-	(HCO ₃)	24	ខ្ល	D 00	, 4	8	15	8	12	11	14	18	15	1	2	23	20	16	16
12, III pa	Po- tas-	stum (K)	2.4	4.	7 -	6	8.8	;	5.0	1.6	1.2	1.2	1.3	1.0	6	1.	1.2	1.2	1.4	1.0
car analyse	Sodium	(Na)	13	15	4 K	6	16	1	12	6.5	5.9	7.2	8.6	8.3	6.2	4.4	11	7.7	8.0	8.8
Chemi	Mag- ne-	sium (Mg)	-:	4.	2 2	2	2.0	2.2	1.5	1.2	1.0	1.1	1.4	1.3	1.3	1.0	1.0	1.5	1.2	1.4
	Cal-	(Ca)	3.4	2.0	9 6	8	4.	3.5	4.9	4.0	3.5	3.4	3.9	3.5	3.0	8.0	3.8	4.4	3.8	3.8
	Iron	(Fe)	0.0	2.	11.0	17	2	!	9	2.	8	9.	8	.13	01.	90.	2.	S.	60.	8
	<u> </u>	(8102)	8.0	9:		6	=	1	13	9	Ξ	7.3	7.0	6.8	8.7	7.9	-2	7.3	8.7	8.3
	Mean	discharge (cfs)		14, 700				7,320						5,240	11.500	10, 100	4,090	3,740	6,000	4, 120
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Now 1-10	Nov. 11-20	Nov. 21-30	Dec. 1, 8-10	Dec. 2-7	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

0.	44.0.8 0.84.0	9.7 11 11 9.3 9.5
6.5 11 12 6.6 8.8	13 9.2 7.8 9.6 13	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4534 4534 4534	37 50 50 50 50
2.0.00 2.0.000 2.0.00 2.0.00 2.0.00 2.0.00 2.0.00 2.0.00 2.0.00 2.0.00 2.0.000 2.0.00 2.00	6.7.7.7.6	1.0000001
70.1 73.1 61.1 78.6 74.7 142.5	90.9 84.1 111 81.6 64.8	56.2 68.2 133 59.8 46.4 48.1 46.1
00-000	000001	8-08-48
15 15 14 13 15	81 51 51 51 51 51 51 51 51 51 51 51 51 51	41 11 11 11 11 11 11
52 52 52 52 53 53 53 53 53 53 53 53 53 53 53 53 53	66 55 55 57	0.52 1.52 1.53 1.54 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50
2.1.3	4:12:1:4	2.0 1.0 1.0 1.3 1.3 1.3
111991		
6.5 6.5 6.0 7.5 13	7.0 7.5 10 7.5 6.0	2.5.2. 2.5.2. 2.5.2. 4.0.5.4.
6.9 7.1 6.9 7.1 9.7	5.6 7.9 3.7 5.9	200 4440 201 4100
18 19 19 19 74 74	28 32 32 17 16	14 13 13 13 18
0.4.4.0.0.2	2.2.2.1.2.1.6.1.6.1.5	44 111
7.6 7.1 7.1 7.6 7.6	9.7 10 13 10 7.0 4.8	0.07 0.04 1.00 1.00 1.00 1.00 1.00 1.00 1.00
2.1.1.0.1.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	1.6 1.0 1.0 1.3	0.1.0.1.0.2.1
8.488440 80480F0	4 0 4 0 0 0 0 0 0 0 0 0 4	24.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0
2.0 86 80 80 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	86.000	
8.7 111 6.2 6.3 5.4	9.1 8.4 6.9 7.9 6.9	4.7. 6.8 8.5.
2,300 10,200 3,150 1,460 1,820 4,240	784 688 1,470 1,300 5,110	1, 820 11, 800 13, 100 9, 300 21, 200 3, 520 3, 770 4, 686
Apr. 1-10, 1955 Apr. 11-20 Apr. 11-20 May 1-10 May 11-20 May 11-20 May 12-24, 27-31 May 25-26	June 1-10 June 11-20 July 11-20 July 1-21 July 11-20 July 11-20 July 11-20 July 11-31	Aug. 1-10 Aug. 11-16,18-20 Aug. 21-31 Sept. 1-10 Sept. 1-10 Average

a Includes equivalent of 4 parts per million of carbonate (CO₃).

CAPE FEAR RIVER BASIN -- Continued

CAPE FEAR RIVER AT LOCK 3, NEAR TARHEEL, N. C.--Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at 8 a.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	59	48	45	38	50	53	65	78	79	83	78
5 1	76	59	47	49	39	50	55 55	66	78	79	83	78
3	76	58	45	47	38	50 52				79		78
4		57					53	65	77		83	
5	74 76	57	44	49	38	55	55 55	68	78	78	83	76
,	10	37	44	49	40	55	99	68	78	80	83	78
6	76	56	43	49	42	55	59	69	78	82	84	77
7	75	55	43	49	42	56	60	69	78	83	84	78
8	74	52	39	48	43	57	60	71	78	84	84	76
9 1	74	53	39	49	45	56	59	70	78	83	84	76
10	74	50	39	49	44	57	60	71	77	80	84	77
11	74	50	40	48	46	58	60	72	77	80	84	74
12	74	50	38	47	45	57	62	73	76	80	84	74
13	74	50	39	45	44	57	63	72	75	80	83	76
14	74	50	39	44	42	58	64	73	75	79	81	75
15	74	50	40	44	42	59	64	72	75	79	80	74
16	74	52	40	42	40	59	65	72	75	79	81	74
17	70	53	39	41	41	59	63	72	75	78	82	74
18	65	54	41	42	41	60	64	72	75	79	83	74
19		54	42	41	43	55	67	72	75	81	83	
20		55	42	40	43	55	69	72	75	82	83	73
20		33	42	40	43	99	99	12	75	02	0.3	13
21	60	57	43	40	39	56	69	72	77	87	85	73
22	60	55	39	40	45	59	70	72	76	84	83	73
23	59	56	39	39	47	57	71	74	78	83	81	73
24	59	54	40	37	47	55	72	73	78	84	81	74
25	60	54	40	38	45	55	72	75	78	83	81	75
26	59	51	39	38	47	58	71	76	79	83	81	75
27	59	50	39	38	48	56	70	76	78	84	78	74
28	60	50	40	39	48	53	70	77	78	84	86	74
29	60	50	43	38		55	69	78	78	84	78	74
30	60	49	44	39		52	67	78	78	84	:-	74
31	59		44	39		53		78		83	78	
Aver- age	68	53	41	43	43	56	64	72	77	81	82	75

CAPE FEAR RIVER BASIN -- Continued

SOUTH RIVER NEAR PARKERSBURG, N.

LOCATION.--At gaging station at highway bridge at Bladen-Sampson County line, and 1.9 miles southwest of Parkersburg, Sampson County. MRAINAGE AREA,-382 square miles. RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1955. REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

		Color	40	20	45	45	;	35	20	9	8	100	75	120	8	200
		Hd	5.1	2.0	4.6	4.6	8.4	4.4	4.5	4.7	5.0	رب د	4.9	4.9	4.9	4.9
	Specific conduct-	ance (micro- mhos at 25°C)	42.5	68.0	93.4	75.8	65.8	62.4	56.8	50.9	49.7	50.1	53.9	45,9	38.2	36.4
	ness CO,	Non- carbon- ate	4	9	12	80	80	2	4	6	87	-	က	e	~	8
	Hardness as CaCO,	Calcium mag- nesium	2	œ	13	6.	o	9	4	m	4	က	ıo	co.	4	9
	Dissolved solids	(residue on evap- oration at 180°C)	29	89	8	89	09	a 53	p49	c51	d64	e 63	a73	f 72	:	g71
ber 1955		(NO ₃)	0.0	٦.	1.1	~	1.3	<u>ښ</u>	4.	₹.	e.	٤.	Τ.	1.	87.	.2
to Septem	i	Fluoride (F)	0.0	٥.	٥.	٥.	;	٥.	0.	0.	۰.	٥.	٥.	٥.	٥.	0.
tober 1954	;	(C1)	3.8	8.0	10	10	89.	8,0	8.0	7.5	9.0	9.0	9.0	6.8	5.5	6.5
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Sulfate (SO ₄)	5.2	13	19	13	11	8.6	6.3	4.0	4.0	3,5	7.2	3.9	3, 1	3.2
nillion, wa	Bicar-	bonate (HCO ₃)	2	~1		-	-	-	0	-	~1	67	~1	e	60	2
parts per	Potas-	Sium (K)	1.2	1.6	1.2	1.1	ŀ	1.0	9.	9.	1.0	1.0	1.2	1.1	1.5	1.4
alyses, in	:	Sodium (Na)	2.7	7.7	8.9	8.0	;	8.8	5.6	5.3	6.3	6.5	5.8	5.3	3.9	3.7
emical an	Mag-	nesium (Mg)	0,5	-	1.7	1.0	1.2	ıo	œ.	4.	67	67.	.5	4.	~.	.3
ð	Cal-	cium (Ca)	1.2	1.9	4.	2.0	1.5	1.6	∞.	9.	1.2	ω.	1.2	1.4	1.2	1.4
		(Fe)	0.12	Ξ.	8	. 10	;	.02	5	. 14	. 39	8	4.	. 46	. 91	.71
		(SiO ₂)	2.4	11	12	8.2	;	4.4	1.5	2.8	5,7	2,6	8,3	70	7.5	7.0
	Mean	discharge (cfs)	1.8	24	162	200	519	638	317	281	82	83	471	269	1,450	1,200
		Date of collection	Oct. 15, 1954	Nov. 15	Dec. 15	Jan. 15, 1955	Feb. 3	Feh. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 1	Sept. 20

a Organic matter present; sum of mineral constituents 32 parts per million. b Organic matter present; sum of mineral constituents 25 parts per million. c Organic matter present; sum of mineral constituents 20 parts per million. d Organic matter present; sum of mineral constituents 28 parts per million. e Organic matter present; sum of mineral constituents 26 parts per million. I Organic matter present; sum of mineral constituents 26 parts per million. Organic matter present; sum of mineral constituents 25 parts per million. g Organic matter present, snm of mineral constituents 25 parts per million.

CAPE FEAR RIVER BASIN -- Continued

NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C.

LOCATION...-At bridge on U. S. Highway 117,0.8 mile north of Castle Hayne, New Hanover County, and 4.7 miles upstream from Prince George Creek.

DRAINAGE AREA..-1499 square miles.

RECORGN AREA..-1499 square miles.

RECORGN AVAILABLE..-Chemical analyses: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

Water temperatures: Maximum, 516 ppm Oct. 15; milimum, 10 ppm Sept. 21-30.

Specific conductance: Maximum adally, 5,060 micromhos Oct. 23, minimum daily, 34.5 micromhos Sept. 25.

Water temperatures: Maximum, 86°F Aug. 2; minimum, 42°F Jan. 30, 31, Peb. 4,

Water temperatures: Maximum, 86°P Aug. 2; minimum, 42°F Jan. 30, 31, Peb. 4,

Water temperatures available in district office at Raleigh,

N. C. No discharge records available for this station.

Chemical analyses. in parts per million. water year October 1954 to September 1955

	.	l																										
Oxygen	Fil- tered	15	:	:	;	:	;	:	1	12	;	;	-	: 	1	!	!	;	14	:		-	!	:		!	;	:
Oxy	Unfil- tered	19	:	;	1	:	;	:	ł	16	:	;		:	ł	;	:	;	18	;	:	:	:	:		:	:	;
2010	COIOI	100	;	;	;	:	:	:	:	22	;	:		:	!	;	:	:	2	;	;	;	;	:		:	:	;
P	da l	6.3	6.2	8.3	6.3	6.8	6.9	6.2	6.8	6.4	6.7	9.9	c	9 0	6.1	6.2	6.1	6.3	6.4	6.2	9.9	.6.3	6.5	6.3		6.3	6.7	6.0
Specific conduct-	(micro- mhos at 25°C)	320	203	731	1,770	2, 280	1,220	4,750	837	2,940	4,720	1,690	040	1,510	976	1,500	3, 100	2,560	1,270	2,440	2,750	1,470	1,720	980		929	1,280	1,990
ness ICO ₃	Non- carbon- ate	33	19	2	174	222	119	200	84	290	488	163	36	5	3	146	313	256	132	252	272	148	175	67		67	120	203
Hardness as CaCO ₃	Calcium, mag- nesium	49	35	98	180	238	134	516	66	302	514	178	2	3 3	\$	162	328	272	148	268	289	162	191	83		4.	137	220
Dissolved solids (residue	on evap- oration at 180°C)	203	;	;	;	;	;	;	;	1,530	;	;		;	;	:	;	!	748	;	1	!	;	;		:	;	:
	(NO ₃)	0.7	1.6	1.3	2.0	4.	1.0	ıc.	1.0	6.	1.0	s.	•	7 .		1.0	1.0	e.	Ε.	∞.	۳.	۳.	1.5	80.		œ.	1.5	ıć.
Fluo-	(F)	0.1	:	;	;	:	;	:	:	0.	:	;		;	1	:	:	;	0.	:	;	;	;	;		;	;	!
Chlo-	(CI)	75	41	182	200	640	330	1,450	230	830	1,430	420	006	900	230	400	900	720	360	710	160	410	480	162		165	310	280
Sulfate	(° 0s)	19	2	32	22	83	48	206	36	123	202	62	Ľ	3 6	ŝ	63	134	105	57	109	111	36	73	23	;	60	21	92
Bicar-	(HCO ₃)	20	2	20	18	20	18	18	18	18	18	18	ç	P :	Ξ,	18	18	18	18	19	21	22	20	19		21	21	77
Po- tas-	sium (K)	2.5	:	:	1	;	;	;	;	22	;	:		:	1	1	1	;	8.2	1	;	:	;	i		!	;	:
Sodium	(Na)	42	;	;	;	:	;	;	:	460	1	1		:	:	:	;	1	194	1	1	1	:	;		;	1	1
Mag- ne-	sium (Mg)	4.4	2.1	12	32	41	22	86	14	22	82	82	8	3 ;	2	82	26	46	22	45	48	25	30	11		07	18	36
Cal-	(Ca)	12	11	15	24	28	20	48	11	37	49	32	6	3 2	22	24	38	33	23	34	35	22	27	15		16	23	28
Iron	(Fe)	0.19	1	;	;	1	;	;	;	5	ł	:		;	ŀ	;	;	;	.13	;	;	:	:	ţ		:	:	;
Silica	(SiO ₂)	3.0	:	;	;	1	!	;	1	2.4	1	;		-	:	:	1	1	3.2	;	1	1	:	1		!	;	ī
Mean																												
Date of collection		Oct. 1-6, 1954	Oct. 7	Oct. 8	Oct. 9-10	Oct. 11-13, 16, 20	Oct. 14, 19	Oct. 15	Oct. 17, 18	Oct. 21-22, 25-27, 29	Oct. 23-24	Oct. 28, 30-31	No. 1 o		Nov. 3-4	Nov. 5-7	Nov. 8-10	Nov. 11-12	Nov. 13-18	Nov. 19-20/	Nov. 21-25	Nov. 26	Nov. 27-29	Nov. 30		Dec. 1-2	Dec. 3-4, 6-7	Dec. 5, 8-9

4.7 0.16 1.18 1.2	22 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	255 884 888 888 888 888 888 888 8	11010 000000 000000 000001 00000000000	00.1. \$20000 4500554 4050000 00000000 10000000 0000	224 4 224 1119 1119 1119 1119 1119 1119	117 118 119 119 119 119 119 119 119	8	962 374 374 374 374 374 374 374 374 374 374	තුරත්තුර තුරත්තුරු තුරුතුරුතු තුරුතුරු තුරුතුරු යු යු යු යු යු යු යු යු යු යු යු යු යු	665 665 665 665 665 665 665 665 665 665	112 21 22 22 22 23 24 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
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a Organic matter present; sum of mineral constituents 53 parts per million. b Organic matter present; sum of mineral constituents 41 parts per million. Organic matter present; sum of mineral constituents 56 parts per million.

CAPE FEAR RIVER BASIN -- Continued

NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C. --Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at 12 m.7

_												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Julv	Aug.	Sept.
1	80	64	56	51	44	55	60	70	78	83	84	79
2	80	64	55	52	45	56	62	70	79	83	86	80
3	80	59	54	52	44		62	70	78	83	85	78 78
3 4	80	59	54	52	42	58	62	71	79	83	85	78
5	80	60	55	52	44	60	62	72	80	84	84	77
6	84	59	50	53	46	60	62	72	81	83	85	77
7	78	58	48	52	48	58	63	72	80	84	85	77
8	76	58	50	52	48	58	62	72	80	84	85	77
9	78	58	50	52	48	60	63	71	78	85	85	77
10	78	58	50	53	48	60	64	73	79	84	84	77 75
11		58	49	50	50	61	64	74	80	84	82	75
12		58	47	50	45	61	65	75	79	84	79	75 70
13		58	47	49	45	63	66	74	79	84	79	74
14		58	48	47	46	61	66	74	79	84	79	74
		59	48	49	46	62	68	74	78	83	79	74
15	-		l	40	40	62	00	14	18	8,	19	14
16		59	47	48	47	64	69	73	79	84	79	75
17		60	47	49	48	64	70	73	79	78	79	75
18		60	49	49	47	65	71	73	79	81	79	75
19		62	47	45	48	64	71	73	78	8~	80	73
20		60	49	45	50	64		74	78	84	80	73
21	68	62	46	45	50	64	73	73	79	84	80	74
22	68	60	45	47	55	66	72	74	80	81	80	75
23	68	58	46	45	50	62	74	74	80		80	75
24	70	58	48	45	50	64	74	75	80	84	78	76
25	68	57	45	45	50	64	73	75	80	81	79	76
26	68	56	48	44	56	65	70	76	80	8.	78	74
27	67	58	48	45	51	60	70	76	80	84	78	74
28	67	57	48	43	54	59	70	80	80	85	77	74
29	68	59	49	43		58	70	78	80	8-	78	75
30	64	55	49	42		58	70	80	81	8.	77	75
31			50	42		60		80		81	::	
Aver-		59	49	48	48	61	61	74	79	8,	81	75

CAPE FEAR RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA

		Color		9		17		25		28				16		92
		Hd		7.0		7.2		6.6		6.2		10.1		7.0		5.5
	Specific conduct-	ance (micro- mhos at 25°C)		56.6 73.2		95.5 98.2		70.1		602 1,140		1,250 2,180		82.6 98.7		176 205
	Hardness	Non- carbon- ate		00		00		00		27		00		0		0 0
	Hardness as CaCO ₃	Calctum, mag- nestum		16 24		34		22		63 92		44 36		28 36		23.8
	Dissolved solids	(residue on evap- oration at 180°C)		51 a 61		78 a73		65 a 51		318 a 471		744 a 1,000		94 a71		122 a 127
ber 1955		(NO ₃)		1.1		6.0		0.8		1.2		1.4		0.6		9.3
to Septem	;	Fluor ide (F)		0.2		0.2		0.0	0		0			0.0		9.4
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride (C1)	J.A	3.0	SGROUND	5.5 5.5	WILLE	4.0 3.5	SOUTH BUFFALO CREEK NEAR GREENSBORO	105 240	NORTH BUFFALO CREEK NEAR GREENSBORO	48 12	INGTON	4.5	IVER	15
ter year O		Sulfate (SO,)	RIVER NEAR BENAJA	3.6	AT BATTL	4. 9.6	FORK NEAR GIBSONVILLE	4 2.6	SK NEAR (33 40	EK NEAR (136 88	CREEK NEAR BURLINGTON	12 4.3	AT HAW R	17
million, wa	Bioor	bonate (HCO ₃)	RIVER N	23	HORSEPEN CREEK AT BATTLEGROUND	45	FORK NE	30	FALO CRE	44	FALO CRE	b 503 c 915		32 46	HAW RIVER AT HAW RIVER	50 43
parts per	Dotos-	stum (K)	HAW	2.2	HORSEPE	2.8	REEDY	2.7	OUTH BUF	4.9	ORTH BUF	13	STONY	1.6	НА	5.5
alyses, in		Sodium (Na)		5.7		6.3		4.0	×	135	ž	378		5.2		ñ
emical ans	Mag	nesium (Mg)		1.7		3.3		1.9		8.2		9.		3.2		2.3
ទី	٤	Cium (Ca)		3.8 6.3		8.4		5.6		12 24		14 13		5.9 - 10		7.3
		Fe)		0.47		0.03		0.05		0.10		0.64		0.01		9. 39
		Silica (SiO ₂)		20		19		14		5.0		-96		20		13
	. neoN	discharge (cfs)		118 64.3		8.52		58.9 29		18.5 9.73		21.8	`	23.8		398 170
		Date of collection		Mar. 10, 1955		Mar. 8, 1955 Aug. 24		Mar. 10, 1955 Aug. 25		Mar. 11, 1955		Mar. 11, 1955		Mar. 11, 1955 Aug. 26		Mar. 11, 1955

CAPE FEAR RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA --Continued

				Chemical	analyses,	in parts p	er million	, water ye	Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	1954 to Se	tember 19	55Cont	nued					
	Mean	01112	-	Cal-	Mag-	0.41	Potas-	Bicar-	,	į			Dissolved solids	Hardness as CaCO,	ness CO,	Specific conduct-		
Date of collection	discharge (cfs)	(SiO _s)	(Fe)	cium (Ca)	nesium (Mg)	(Na)	Sturn (K)	bonate (HCO _s)	(SO,)	(C1)	Fluoride (F)	(NO _s)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Нq	Color
							HAW RI	VER NEAR	HAW RIVER NEAR PITTSBORO	Q							•	
May 6, 1955	457 370	15	0.04	6.8 4.6	2.2	18	3.4	54	13 8.7	10 9.5	0.3	1.0	104 a 91	75 75 75	00	156 120	8.8	11
							YEW HOPE	RIVER N	NEW HOPE RIVER NEAR PITTSBORO	BORO								
May 4, 1955	35.2 20.8	15	0.04	9.2	2.7	п	2.9	37 40	8.8 8.8	10	0.5	1.9	101 a 82	34	4	138	8.8	. 88
						WEST	FORK DE	EP RIVER	WEST FORK DEEP RIVER NEAR HIGH POINT	H POINT								
Apr. 11, 1955	17,11,1	22	0.01	6.4 8.3	2.5	6.2	2.2	39	5.1	3.0	0.1	1.0	70 a 67	26 25	00	80.6	7.8	10
				1		EAST	FORK DEEP		RIVER NEAR HIGH POINT	H POINT								
Mar. 8, 1955	9.3 5.61	26	0.05	7.1	3.6	5.3	1.8	44 48	3.7	4.2 3.0	0.0	0.3	73 a 75	32 30	00	90.8	7.2	15
							DEEP RI	VER NEAR	DEEP RIVER NEAR RANDLEMAN	×.								
Mar. 8, 1955	134 58	14	0.04	7.3	2.8	8.1	2.0	31	8.0	6.8	0.0	3.0	73 a 69	29	4 4	97.5 106	8.6	23
							DEEP	RIVER AT	RIVER AT RAMSEUR									
Mar. 8, 1955	307 175	12	0.03	6.5	1.8	8.8	2.5	32	9.7.0	11 7.0	0.0	2.1	82 a 57	2 28 23	0 80	109 91.0	6.9	22
							BRUSH C	REEK NEA	BRUSH CREEK NEAR COLERIDGE	GE								
Oct. 7, 1954 Aug. 24, 1955	0.28			6.0	1.4			22.28	1.7	3.8	•	2.1		24	-0	69.7 54.6	8.4 8.6	
a Sum of determined constituents	constituents.																	

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a Sum of determined constituents.

d Mean discharge.
e Organic matter present; sum of mineral constituents 17 parts per million.
f Organic matter present; sum of mineral constituents 19 parts per million.

CAPE FEAR RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA--Continued

				Chemica	l analyses	, in parts	per million	ı, water ye	ar October	Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	tember 19	55Cont	panu					
	Mean			[8]	Mag-		Dotas	Bicar.			;		Dissolved solids	Hardness as CaCO,	ness CO,	Specific conduct-		
Date of collection	discharge (cfs)	Silica (SiO ₂)	(Fe)	ctum (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Suirate (SO ₄)	Chloride (C1)	Fluoride (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carhon- ate	ance (micro- mhos at 25°C)	Hď	Color
						LII	TLE COHA	RIE CREE	LITTLE COHARIE CREEK NEAR ROSEBORO	OSEBORO								
Feb. 3, 1955	135 179	9.3	0.77	1.8	2.1	4.9	1.7	3.4	15 2.7	9.0	0.0	1.2	66 a 30	13	10 1	75.8 46.2	5.3 5.1	06
							BLACK R	IVER NEA	BLACK RIVER NEAR TOMAHAWK	WK								
Feb. 3, 1955.	592 1,910	8.6	0.94	3.6	1.9	3.9	1.6	ကေ	21 6.7	7.5	0.0	1.0	70 a 38	19 12	17 5	80.5 53.7	5.6 5.6	70
							COLLY	CREEK NE	COLLY CREEK NEAR KELLY									
Feb. 2, 1955	30 605	9.7	0.76	3.7	2.2	4.1	3.0	g 0. 10 0	14 5.2	12 8.0		1.5	158 a 34	18 5	18 5	123 82.3	4.1	550
						NORTHEA	ST CAPE	FEAR RIV	ER NEAR	NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN	z							
Feb. 2, 1955	2,910	8.1	0.83	17	3.2	6.2	1.8	5 10	29 5.6	25 10	0.0	0.6	158 a 44	56 16	52 8	219	6.3	200
			•	1		0		WACCAMAW RIVER BASIN	R BASIN	2		0						
			Ē I	SCELLAI	NECUS AN	MISCELLANEOUS ANALYSES OF		N WAC	CAMAW KI	STREAMS IN WACCAMAW RIVER BASIN IN NORTH CAROLINA	TN NGE	H CAKOL	INA					
Feb. 2, 1955	43.2	9,9	3,1	10.4.9	1.2	6'4	3.0	80 gr	24.0 0.0	41 51	0.0	4.4.	128 a 53	31	26	133	8 60	130

a Sum of determined constituents.

PEE DEE RIVER BASIN

REDDIES RIVER AT NORTH WILKESBORO, N. C.

LOCATION --at bridge on U. S. Highway 421, at city limits of North Wilkesboro, Wilkes County, a quarter of a mile downstream from North Wilkesboro municipal dam, 0.6 mile upstream from mouth and 1½ miles downstream from gaging station.

DRAINAGE AREA. -93.9 square miles (it gaging station).

RECORDOR ALTIABLE. --Chemical malayses: October 1947 to September 1948, October 1953 to September 1955.

RECORDS ALTIABLE. --Chemical malayses: October 1947 to September 1955.

EXTREMES, 1954-55. --Dissolved solids: Maximum, 38 ppm Sept. 1-10; minimum, 27 ppm Mar. 31.

Radness: Maximum, 12 ppm Apr. 21-30; minimum, 7 ppm Reb. 11-19.

Specific conductance: Maximum daily, 42.9 minimum daily, 25.0 micromhos Oct. 1.

Specific conductance: Maximum, 80 P May 30, June 5, July 21, 23; minimum, prescring point Dec. 8

FRAMES. --Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of steading every vear October 1954 to September 1955 given in WSP 1383. No appreciable inflow between sampling point and gaging station.

	n per	Fil- tered	2.2	2.2	2.3	2.5	2.1	1.9		2.0	2.7	2.2	2.0	1.7	1.8	2.2	2.0	1.6	1.8	1.6	1.4	:
	Oxygen	Unfil- tered	3.4	3.0	2.8	2.4	3.5	2.6		0.0	80 1	2.2	3.5	1.9	1.8	3.0	2.1	3.1	;	2.4	2.7	:
		Color	ç	-	 œ	4	22	œ		0	_	-	œ	ß	4		63	ro.	9	œ	4	}
		Hd.	7.2	<u>د</u> .	8.	6.7	6.5	8.8						8.8		6.9	6.9	7.2	6.7	7.2	6.5	7.0
	Specific conduct-	(micro- mhos at 25°C)	39.4	34.5	35.3	33.0	32.6	35.9		31.7	32.4	34.7	31.7	31.3	31.8	29.4	29.3	31.0	36.8	39.2	31.7	25.9
	ess co _s	Non- carbon- ate	0	0	0	0	0	•	,	0	0	0	0	0	0	0	0	0	0	0	-	•
5	Hardness as CaCO ₃	Calcium, mag- nesium	11	01	11	6	6	6		00	6	∞	6	89	∞	00	7	æ	10	80	89	 •
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids	on evap- oration at 180°C)	33	33	32	32	37	31		30	30	30	32	30	53	32	29	28	31	30	59	27
1954 to S	Nitrate	(NO ₃)	0.5	e.	~?	87.	0.	e,		e.	c ?	c.	_	Ξ.	٥.	6	<u>ښ</u>	4	e.	4	1.2	4.
October	Fluo-	ride (F)	0.1	=:	٦.	٥.	٥.	٦.		0.	~.	0.	0.	0.	0.	0	0	7.	7.	0.	0.	;
er year	Chlo-	ride (CI)	2.0	 8	1.2	8.	3.8	2.2						2.0		1 5	2	2.0	2.0	1.5	1.5	1.0
llion, wat	Sulfate	(so*)					2.8			2.7	5.6	5.0	2.5	2.7	1.7	2.4	2.2	2.6	3.1	2.5	2.5	2.1
ts per mi	Bicar-	bonate (HCO ₃)	16	14	16	15	13	13		13	13	13	13	12	13	12	12	12	14	11	6	11
s, in par	Po- tas-	sium (K)	1.2	1.4	1.2	1.2	1.4	1.0		0.1	0.1	1.7		9.	₹.	-	90	1.0	1.2	∞.	∞.	;
ıl analyse	Sodium	(Na)	2.1	2.2	2.0	2.7	3.6	2.4		2.4	2.4	3.0	2.7	2.7	2.6	2.5	2.3	2.3	2.5	2.0	1.9	:
Chemics		sium (Mg)	1.1	1.2	1.2	6.	۲.	9,		٠.	9.	۰.	∞.	۲.	∞.		9	9.	٠.	e.	e.	e.
	Cal-	(Ca)	2.7	2.0	2.6	2.2	2.6	2.7		2.4	2.6	2.4	2.2	2.1	2.0	2.1	2.0	2.5	3.0	2.6	2.6	2.6
		(Fe)	90.0											8.			8					:
		(SiO ₂)	11	20	8.7	12	8.7	13		11	8.4	8.7	12	12	12	11	8	8.1	8.5	6.2	2.0	-
	Mean	discharge (cfs)														156						
	:	Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	_	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-19.	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31	Mar. 31

PEE DEE RIVER BASIN--Continued

REDDIES RIVER AT NORTH WILKESBORO, N. C.--Continued

Oxygen	Fil- tered	1.5	2.2	1.8	1.9	1.7	2.0	1.6	1.7	2.0	2.1	2.0	2.4	2.2	2.6	1.7	2.1	1.6	2.2	
Oxy	Unfill- tered	1.6	6.4	2.8	2.8	2.9	7.8	2.6		3.0		4.9	4.	4.4				2.4		, ,
1	Cotor	4	4	12	&	~	12	7	~		9	9	12	13	7	3	en	20	4	·
-	ŧ.	6.7		6.2		6.3		7.4	7.3	7.4	8.9	£.	7.0	7.7	9.7	7.3	6.8	6.9	6.1	
Specific conduct-	(micro- mhos at 25°C)	31.2	33.7	31.9	30.0	30.0	30.3	38.3	30.5	33.0	33.8	35.2	36.2	35.1	36.6	35.2	34.3	32.9	34.5	
less CO,	Non- carbon- ate	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1 4 % [Calcium, mag- nesium	80	80	21	6	91	ъ	=======================================	91	01	6	2	2	11	6	0	2	6	60	
Mag- Sodium tas- Sodium tas- Sodium tas- Soliar- Soliate Chio- Fluo- Nitrate residue as Chio- Fluo- Fluo- Nitrate residue as Chio- Fluo- Nitrate residue as Chio- Fluo- F		62	34	33	29	29	32	31	31	32	34	31	36	32	33	32	38	30	30	
Nitrate	(NO ₃)	9.0	۲.	9.	₹.	9.	9.	۰.	<u>∞</u>	'n	1.4	1.1	6.	-	6.	9.	Ξ.	٦.	1.0	
Fluo-	(£)	0.0	٥.	٥.	٥.	٦.	Ξ.	٦.	0.	0.	0.	-:	Ξ.	1.	Ξ.	Ξ.	0.		-:	,
Chlo-	(15)	1.8	5	1.5	1,2	1.2	1.5	1.5	1.5	1,2	1,5	1.0	1.5	1.2	~	1.8	2.0	1.5	2.0	
Sulfate	(°0s)	2.6	3.1	1.9	1,7	1.2	1.3	1.2	2.4	2.2	1.3	1.5	1.3	1.7	∞.	1.0	1.4	1.5	1.5	
Bicar-	(HCO ₃)	12	=	12	14	14	12	15	14	91	12	14	91	18	17	17	12	16	14	
Po- tas-	sium (K)	9.0	1.2	8.	8.	8	1.1	2.	۲.	1.5	1.3	1.0	1.1	1.1	1.3	1.2	1.2	1.0	1.2	
Sodium	(Na)	2.5				2.5	2.1	2.0	2.0		1.8	1.9	2.2	2.3				7.5		
Mag- ne-	slum (Mg)	0.2	۳.	1.5	9.	۳.	۲.	1.2	1.0	1,1	۲.	8.	۲.	1.0	۲.	۵.	6,	-	8.	
Cal-	(Ca)	2.8	2.8		2.5	3, 5	2.4	2.4	2.4	2.4	2.4	8.7	2.8	2.7	2.5	2.8		2.4	2.4	
Iron	(Fe)	0.01	2.	10.	_හ	8	Б.	8.	8	.02	.01	8	8.	25	5.	10.	10.	6.	٥.	
Silica	(SiO ₂)	11	12	14	=	Ξ	15	12	12	12	8.8	=	12	11	12	12	12	12	12	
Mean	(cfs)	85										171		108						
Pote of collection	Date of consciton	Apr. 1-10, 1955	pr. 11-20	pr. 21-30	lay 1-10	fay 11-20	fay 21-31	une 1-10	une 11-20	une 21-30	uly 1-10	uly 11-20	July 21-31	ug. 1-10	ug. 11-20	ug. 21-31	ept. 1-10	ept. 11-20	Sept. 21-30	

PEE DEE RIVER BASIN -- Continued

REDDIES RIVER AT NORTH WILKESBORO, N. C.--Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at 8:30 a.m.,

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	52	39	43	33	56	46	58	69	71	74	73
2	77	46	40	44	37	57	50	56	73	71	75	
3	74	38	34	43	36	55	52	68	73	70	76	69
4	70	40	36	45	48	55	50	64	73	72	76	70
5	72		45	48	35	57	52	64	80	70	75	68
6	68	44	35	48	42	56	53	65	70	70	75	70
7	68	46	35	48	40	50	55	55	66	70	76	70
8	66	44	32	40	48	42	58	62	63	74	75	72
9	65	44	35	44	38	44	51	73	62	72	72	70
10	64	45	37	43	38	46	56	61	73	72	75	69
11	65	40	36	41	38	48	56	65	66		73	68
12	65	42	40	42	34	55-	55	65			72	70
13	65	45	39	39	33	55	58	56	64		74	69
14	68	42	42	33	36	57	57	65	62		74	68
15	68	45	40	38	36	54	56	65	62		72	68
16	55	49	37	37	36	53	57	64	60		75	65
17	54	55	38	36	44	52	58	61	64		75	67
18	50	55	42	34	40	50	60	64	66		73	68
19	56	56	40	36	40	49	62	65	65		1	68
20	50	58	34	38	43	52	62	67	63		74	70
21	54	45	33	38	45	50	63	73	70	80	73	70
22	52	42	35	44	48	50	58	69	70	76	72	72
23	50	45	33	37	45	44	60	67	70	80	73	70
24		46	34	38	48	48	58	73	70	78	73	70
25	54	43		36	43	53	56	68	72	75	71	68
26	52	42	40	38	43	50	50	69	68	78	70	66
27	55	38	45	38	-58	40	55	70	70		70	64
28	55	40	44	36	58	45	55	68	73	78	69	68
29	57	42	52	\		48	56	70	70	76	69	65
30	56	38	48	36		43	58	80	72	74	73	57
31	56		42	33		44		68		76	69	
Aver-		45		40	40							
age	61	45	39	40	42	50	56	66	68		73	68

PEE DEE RIVER BASIN -- Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.

LOCATION. --At bridge on U. S. Highway 64, 80 feet upstream from gaging station, 1½ miles south of Yadkin College, Davidson County, and 6½ miles downstream from Reedy Creek. DRAINAGE AREA. --2,280 square miles, approximately. RECORDS AVAILABLE. --Chemical analyses: October 1943 to September 1944, October 1950 to

September 1951.
Water temperatures: October 1943 to September 1944, October 1950 to September 1951.
Sediment records: January 1951 to September 1955.
EXTREMES, 1954-55, -Sediment concentrations: Maximum daily, 2,800 ppm June 12; minimum

EXTREMES, 1954-55. --Sediment concentrations: Maximum uaily, 2,000 ppm oduc 12, minimum daily, 6 ppm Oct. 1, 2.

Sediment loads: Maximum daily, 86,700 tons Apr. 15; minimum daily, 6 tons Oct. 1, 2.

EXTREMES, 1951-55. --Sediment concentrations: Maximum, 2,970 ppm May 26, 1952; minimum, 1 ppm Dec. 3, 1953.

Sediment loads: Maximum daily, 108,000 tons Jan. 23, 1954; minimum daily, 3 tons Dec. 3, 1953.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in Maximum 1922.

Suspended sediment,	water year	October 195	4 to	September	1955

		October		I	November			f^cember	
- 1		Suspende	l sediment		Suspende	d sediment	24	Suspende	l sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1,	400	6	6	932	33	83	1,660	60	269
2	345	6	6	852	28	64	1,430	40	154
3	445	7	8	925	30	75	1,310	20	71
4	555	7	10	1,020	39	107	1,230	15	50
5	460	7	9	1,110	38	114	1,230	15	50
6	405	7	8	1,030	20	56	2, 520	190	1,290
7	410	8	9	1,020	18	50	3,250	180	1,580
8	360	8	8	1,010	19	52	2,300	150	932
9	330	8	7	918	18	45	1,790	70	338
10	375	8	8	895	13	31	1,840	40	199
.1	445	8	10	873	11	26	1,700	30	138
2	370	8	8	852	9	21	1,610	30	130
13	445	8	10	810	9	20	2,440	138	s 1, 250
4	370	8	8	831	9	20	4,750	500	6,410
15	6, 100	1,170	s 35, 500	866	9	21	4,050	270	2,950
16	13,100	1,570	s 59,400	859	9	21	2,750	140	1,040
17	3,180	572	s5,310	2,640	515	s 5,560	2,060	105	584
18	1,560	220	927	5,420	990	s 15,400	1,920	60	311
9	1,110	150	450	2,750	335	2,490	2,150	55	319
0	978	72	190	2,400	2 10	1,360	2,100	50	284
1	910	52	128	2,750	230	1,710	1,790	30	145
2	831	45	101	2,200	120	713	1,560	28	118
3	728	30	59	1,700	65	298	1,520	25	103
4	768	28	58	1,560	45	190	1,390	15	56
5	796	35	75	1,430	30	116	1,390	15	56
6	710	33	63	1,270	25	86	1,350	15	55
27	716	26	50	1,270	15	51	1,350	12	44
8	740	26	52	1,230	20	66	1,270	12	41
9	768	26	54	2,300	230	s1,430	1,310	15	53
0	859	28	65	2,060	90	500	2,700	124	s1,340
1	992	32	86				6,620	672	s11,800
Total.	40, 561		102,683	45, 783		30,776	66,340		32, 160

s Computed by subdividing day.

PEE DEE RIVER BASIN

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		January			February			March	
		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons
•	charge	concen-	Tons per	charge	concen-	Tons per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
	2 550	405	3,880	1 100	(ppin) 8	26	2,020	40	218
1 2	3,550 2,550	225	1,550	1,190 1,270	8	27	2,060	43	239
3	2,200	108	642	1,350	8	29	1,920	40	207
4	1,880	60	305	1,310	8	28	1,790	30	145
5	1,740	55	258	1,230	8	27	1,700	28	129
6	1,660	40	179	2,980	184	s3,150	3,320	879	s 8, 530
7	1,560	38	160	18,100	1,080	s 53,800	2,850	930	s 7, 110
8	1 430	35	135	12,000	537	s 18,500	2,150	360	2,090
9	1,430	22	85	4,820	400	5, 210	1,920 1,790	125	648
10	1,430	20	77	3,450	300	2,790	1,790	65	314
11	1,520	20	82	2,950	180	1,430	1,700	65	298
12	1,520	19	78	2,850	195	1,500	1,660	65	291
13	1,520	15 14	62 53	2,400 2,100	135 110	875 624	1,790 1,880	65 65	314 330
14 15	1,390 1,310	14	50	2,100	90	501	1,740	60	282
10		•••	"	1 2,000					
16	1,310	14	50	2,020	100	545	1,880	60	305
17	1,350	14	51	1,970	100	532	3,300	330	2,940
18	1,270 1,310	12 11	41 39	1,920 1,740	75 60	389 282	3,550 3,450	410 290	3,930 2,700
19	1,310	11	40	1,740	35	161	5,300	570	8, 160
	-						l '		
21	1,350	11	40 39	1,660	30	134	4,750	345	4,420
22	1,310 1,430	11 12	39 46	1,610	35 35	152 152	4,050 6,260	252 480	2,760 8,110
23 24	1,480	12	48	1,610 2,100	43	244	5,080	400	5,490
25	1,390	12	45	2,500	70	472	3,750	200	2,020
					:			1 1	
26	1,350 1,310	12 12	44 42	2,100 2,020	70 40	397 218	3,150 2,850	98 92	833 708
27	1,390	9	34	2,020	38	207	2,500	88	594
29	1,310	8	28	,			2, 250	60	364
30	1,310	8	28				2,150	55	319
31	1,270	8	27				2,020	50	273
Total .	48,180		8, 238	85,0 3 0		92,402	86,580		65,071
		April			May			June	
1	1,920	38	197	2, 100	80	454	1,520	70	287
2	1,790	38	184	2,060	78	434	1,390	68	255
3 4	1,840 1,840	38 40	189 199	1,920	62 60	321 311	1,270	48 40	165 129
5	1,740	32	150	1,920 1,880	55	279	1,190 1,230	40	133
							,	40	405
6	1,700 1,840	35 43	161 214	1,840 1,700	35 35	174 161	1,270 1,190	40 36	137 116
7 8	1,840	45	224	1,700	35	161	1,390	34	128
9	1,610	45	196	1,700	33	151	2, 250	27	164
10	1,560	35	147	1,610	22	96	1,660	35	157
11	1,610	35	152	1,560	20	84	3,940	1,920	s 52, 900
12	2,490	105	706	1,560	20	84	8,530	2,800	s 71, 300
13	4,250	580	6,660	1,840	110	546	3,150	1,160	9,870
14	17,300	1,660	s 84, 900	2,150	205	1,190	2,100	420	2,380
15	29, 200	1,100	86,700	2,020	48	262	1,700	195	895
16	18,500	660	33,000	1,970	40	213	1,560	115	484
17	6,140	420	6,960	1 840	40	199	1,430	70	270
18	4,650	330	4,140	1,700	38	174	1,350	70	255
19 20	3,950 3,550	300 200	3,200 1,920	1,610 1,520	30 30	130 123	1,310 1,350	65 70	230 255
			l i	1					
21	3,050	180	1,480	1,430	30	116	1,390	90	338
23	2,950 3,050	185 150	1,470 1,240	2,060 4,250	274 790	s1,900 9,070	1,520 1,520	85 55	349 226
24	2,750	145	1,080	3,350	640	5,790	1,430	70	270
25	4,150	710	7,960	2,750	450	3,340	1,270	140	480
20		360			400			100	800
26 27	3,650 2,950	360 320	3,550 2,550	2,450 1,880	458 305	3,030 1,550	1,230 1,150	120 60	399 186
28	2,550	170	1,170	1,560	175	737	1,110	55	165
29	2,400	120	778	1,520	95	390	1,030	55	153
30	2,200	80	475	1,480	75	300	992	55	147
31	100 000		051 050	1,700	70	321	EQ 400		149 909
Total .	139,020		251,952	60,630		32,091	53,422		143, 223

s Computed by subdividing day.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

PEE DEE RIVER BASIN -- Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		July			August			September	
- 1	Mean	Suspende	d sediment	Mean	Suspende	d sediment	35	Suspended	sediment
Day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	978	30	79	1,270	140	480	810	42	92
2	978	35	92	1,560	165	695	824	42	93
3	940	45	114	1,270	150	514	880	46	109
4	992	50	134	1,150	120	373	895	63 (152
5	1,190	50	161	1,070	105	303	1,070	65	188
6	1, 190	58	186	1,070	70	202	992	62	166
7	1,190	90	289	1,070	70	202	970	43	113
8j	1,390	120	450	1,000	70	189	1,030	40	111
9	1,700	160	734	1,520	150	616	902	36	88
10	1,790	370	1,790	1,660	205	919	775	26	54
11	2,020	765	4,170	1,840	305	1,520	754	26	53
2	2,650	1,190	8,510	1,310	190	672	754	26	53
13	6,510	1,950	s35,400	1,110	110	330	704	24	46
14	4,700	1,120	14,200	1,070	115	332	704	24	46
15	2,650	390	2,790	1,350	240	875	698	23	43
16	2,020	150	818	1,480	240	959	674	19	35
ا ا	1,660	135	605	2,200	368	2,190	650	18	32
l 8]	1,430	75	290	4,350	775	9,100	632	17	29
	1,350	75	273	2,850	595	4,580	600	15	24
20 [1,270	75	257	1,670	305	1,380	605	14	23
21	1,390	75	281	1,270	140	480	585	15	24
2	1,740	80	376	1,110	95	285	530	14	20
3	1,230	120	399	1,070	95	274	555	8	12
4	1,110	115	345	1,110	85	255	575	11	17
5	1,840	542	s4,030	1,190	50	161	674	22	40
6	1,790	820	3,960	1,020	48	132	761	23	47
37	1,230	490	1,630	910	45	111	845	25	57
8	1,030	175	487	895	38	92	796	25	54
9	970	185	485	845	35	80	716	21	41
9]	1,390	260	975	817	35	77	692	20	37
Mate 1	1,270	130	446	810	37	81			
Total.	53,588		84,756	42,917	<u></u>	28, 459	22,652		1,899
									744,703 873,710
		(tons)				••••••		·····	013, 110

s Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Particle-site analyses of suspanded sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, decandiction; P, pipetic; S, sere; M, in native water; W, in distilled water; C, chamically dispersed; M, mechanically dispersed)

,	Methods of analysis		BW	BN	BN	BW	BN	BN	BN	i	BN	BN	BN	BN	ΒW	ΒW	BW	BW	BW	BW
		1.000			•		_										_			
		0.500					_													
		0.350																		
	limeters	0, 250										_			-					
	ze, in mil	0.125															_			
	dicated si	0.062	22	91	96	82	₹	06	82	i	92	25	96	69	18	83	88	91	92	92
ediment	Percent finer than indicated size, in millimeters	0. 031	83	49	82	F	16	82	72		46	73	92	28	72	25	89	87	89	86
Suspended sediment	Percent fir	0.016	56	32	31	63	99	63	48		S	21	87	44	57	42	52	79	28	68
Su	4	0.008	40	21	56	22	22	42	28		8	31	2	31	48	32	37	99	43	20
		0.004	35	17	19	32	41	18	15		14	8	51	12	30	22	22	48	32	30
		0.002																		
	Concentration of suspension	analyzed (ppm)	1,890	716	640	485	465	416	228		5,390	912	493	403	1,390	9,740	3,940	989	6,560	1,950
	Concentration	of Sample (ppm)	2,250	981	1,070	909	226	642	703		1,260	1,200	609	404	2,170	2,440	1,010	808	2,130	1,200
Water	tem- per-	ature (°F)										_								
	Discharge	(cra)	15,900	2,660	4,650	6, 140	6,140	6,380	6,380		15,800	20,000	2,550	6,750	18,700	20, 200	27,800	4,750	8,440	5,080
	Time		10:25 a. m.	11:00 a.m.	4:15 p. m.	9:00 a.m.	9:00 a.m.	5:30 p. m.	5:30 p. m.		2:45 p. m.	5:00 p.m.	4:30 p.m.	2:25 p. m.	12:30 p.m.	2:30 p. m.	6:30 a.m.	6:30 p. m.	2:00 p. m.	9:00 a.m.
	Date of collection		Oct. 16, 1954	Nov. 18	Nov. 18	Dec. 14	Dec. 14	Dec. 31	Dec. 31		Feb. 7, 1955	Feb. 7	Mar. 7	Mar. 23	Apr. 14	Apr. 14	Apr. 15	Apr. 25	July 13	July 14

PEE DEE RIVER BASIN--Continued

LYNCHES RIVER AT EFFINGHAM, S. C.

LOCATION.--Temperature recorder at bridge on U. S. Highway 52, 75 feet upstreem from Atlantic Coast Line Railroad bridge and 1 mile south of Effingham, Florence County.

FALORED AND SQUARE MILES, approximately.

RECORDS AND AND ELEMENT CONTRACTOR CONTRACTOR TO SOUTH TO SOU

						Ţ	Temperature (°F) of water, water year October 1954 to September 1955	re (° F)	of wate	r, wate	r year (October	1954 to	Septem	ber 195	ιņ						
, of	Oct	October	Nov	November	\vdash	December	Jan	January	February	uary	Ma	rch	April	ı.	May	A	June	ie.	July	y	August	ıst
Day	max	min	max	uju	max	mim	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	L	74	L	54	L	47			39	38	26	54	55	53	99	26	75	7.	76	75	80	80
2	92	74		23		41			41	38	22	28	26	22	99	65	74	23	16	2	81	4
3	92	74		20		46	_		42	41	22	22	20	26	67	92	74	72	77	92	81	8
4	20	75	_	49	_	45			42	41	28	24	8	28	89	99	55	12	77	7.7	8	80
5	_	11	_	49		4			41	40	62	28	29	29	69	67	74	72	42	92	81	80
8	42	77	20	20	45	4	20	49	\$	40	62	62	09	29	11	69	74	73	18	77	83	8
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PEE DEE RIVER BASIN--Continued

DROWNING RIVER NEAR HOFFMAN, N.

LOCATION.—At gaging station on bridge on U. S. Highway 1, three-quarters of a mile downstream from Deep Creek, 1 mile upstream from Seaboard Airline Railway Dridge, and 4 miles northeast of Hoffman, Richmond County.

RECORDS AVAILAGE.—Chemical analyses: October 1954 to September 1955.

RECORDS AVAILAGE.—Chemical analyses: Maximum, 77 Aug. 21; minimum, 36°F Peb. 14.

EXTREMES, 1954-55.—Water temperatures: Maximum, 77 Aug. 21; minimum, 36°F Peb. 14.

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EXTREMES, 1953-6.—Water temperatures: Maximum, 77 Aug. 21; minimum, 36°F Peb. 14.

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Chemical analyses, in parts per million, water year October 1954 to September 1955

	Mean			18	Mag		Dotes.	Ricar-					Dissolved solids	Hardness as CaCO,	ness CO ₃	Specific conduct-		
Date of collection	discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	cium (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	pH	Color
Oct. 15. 1954.	161	5.5	0.11	°	0.5	1.7	0.4	4	1.8		0.0	0.0	22	4	1	16.6	5.4	40
Nov. 15	146	6.3	. 17		4	1.9	4.	60			٥.	۳.	25	4	-	21.6	5.6	45
Dec. 15	292	5.4	.11	8	5	2,0	4.	67	2,6	2.8	٥.	67	a 29	4	67	23.0	5.1	55
Jan. 15, 1955	265	4.7	. 14		4.	1.9	7.	8			٥.	-:	b26	m	-	18.8	5.3	35
Feb. 15	324	6.1	02	00	4	2.3	•	~	3,2	3.2	0,	-	b 25	4	61	20,8	5.4	28
Mar. 15	302	6	13		ı,	2,3	4	8	3.5	3.0	٥.	۲.	c32	4	83	23.2	5.3	90
Apr. 15	692	4.0	. 14	1.2	67	1.8	4.	en	2.3	25	٥.	۳,	d 44	4	67	30.6	5.2	80
May 15	204	4.6	.31	1.0	ņ	1.8	4.	•	2.4		°.	e.	c40	4	67	24.3	5.3	90
.Ima 15	25	60	98	œ	6	6	67	67		22	0	4	83	69	-	16.1	6.0	35
July 5	9	2.5	=	000		8.1	9	· en			. 0.		;	6	-	21.5	5.5	35
July 15	246	6.1	17		. 87	1.9		4	1.3	2.5	•	۳.	a 34	6	•	. 22. 2	5.9	20
Aug. 15	134	6.1	. 24	80	2	1.9	4.	4	89,		0.	٦.	c 34	60	0	20.3	5.5	09
Aug. 23	238	6.2	. 19	8	8	2.1	9.	4	1.0		٥.	27	;	<u>۔</u>	0	23.2	5.3	09
Sept. 15	134	6.1	. 50	4		2.1	ıç,	3	6.	2.5	o.	. 2	c31	2	0	18.0	5.6	99
a Organic matter present; sum of mineral constituents 16 parts per million. b Organic matter present; sum of mineral, constituents 18 parts per million, c Organic matter present; sum of mineral constituents 15 parts per million.	ent; sum of min ent; sum of min ent; sum of min	eral cons eral cons eral cons	tituents 1 tituents 1 tituents 1	6 parts p 3 parts p 5 parts p	al constituents 16 parts per million al constituents 13 parts per million al constituents 15 parts per million	د در در												

d Organic matter present; sum of mineral constituents 14 parts per million.

PEE DEE RIVER BASIN--Continued

DROWNING CREEK NEAR HOFFMAN, N. C.--Continued

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September	min	2 2	_ _ _	22	2	22	E	23	# F	2 ¦	2 2	2 2	2 8	6 6	67	89	89	69	69	2	2	2		69	67	91	6	8 :	-
Sept	max	<u>\$</u> £	2 22	23	52	2	74	7.	ខ្ល	2 ;	2 :	= 2	25	8 8	8	8	66	\$ 6	02	7.	12	72	2	77	69	200	88	8 ;	
18t	min	2 2	75	7.	74	74	15	2	22 2	2 1	22	2 6	2 2	<u> </u>	7.5	73	73	7.5	75	75	75	74	73	72	2	2	22	2 2	ا
August	max	92.5	92	75	5	15	18	16	76	2 1	9 2	9 2		4 5	92	2	21	2 2	77	18	92	2	42	Ę	2	2	22	2 2	
y	min	89 69	2	2	2	72	23	73	73	2 ;	25	7 5	9 6	2 22	7.3	74	22	5.5	2	74	5	74	74	42	2	e	75	£ 5.	
July	max	25	2 22	73	74	47	15	12	47.	<u>.</u>	E 5	25	2 6	2 😤	2,5	92	46	£ £	75	75	22	15	75	92	18	9	9.2	9	
Je	min	88 8	6.4	\$	65	99	88	89	99	0	9	200	0 8	92	84	65	99	67	88	69	2	2	2	71	69	80	88	8 :	
June	max	69	99	99	67	88	69	69	88	8	67	200	9 6	5 5	ž	88	69	8 6	20	12	7	E	52	72	2	69	69	å :	
1A	min	2 62	82	63	65	99	65	65	99	5	9 8	9 6	- e	32.8		65	65	8 8	87	88	69	69	69	2	69	69	2:	69	;
May	max	8 8	88	65	67	67	99	67	67	ē :	88	200	8 5	. 8	8	67	67	8 8	8	69	2	2	17	11	7	=	22	2 =	
11	min	49	2 2	22	22	55	8	22	200	ē :	8	200	200	3 5	2	65	99	8 6	2	69	88	69	89	65	25	82	8:	5 ;	
Apri	max	2 23	57	88	28	26	90	9	28	3	2 5	20	3 8	3 5	8	69	2	2 2	72	2	2	2	2	89	99	64	8	2 :	
ch	min	22 22	53	53	26	28	28	25	S :	7.	25	6 9	2 2	2 2	£	28	24	¥ %	2	28	25	22	22	22	2	49	<u>+</u>	- 84	
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lary	min	8 8	3	41	9	40	4	48	45	4.	9 .	41	0 0	3.5	0	42	4	£ 4	44	46	48	48	48	45	46	8	;	1 1	
February	max	39	43	43	41	44	48	48	48	2	7-	46	7.0	\$ 9	43	4	46	8 4	4	8	51	51	49	48	48	22	1	; ;	
ary	min	48	48	47	47	48	8	46	46	2	46	3 4	2 5	40	-17	9	40	8 8	8	88	39	38	39	38	ŝ	40	88	8 8	;
January	max	49	49	48	48	20	8	48	46	5	46	94	2 5	7 5	14	42	9	\$ £	2	4	40	39	40	40	40	2	9 2	2 2	;
nber	min	44	42	41	41	42	39	38	38	200	8 8	9 6	2 5	\$ 5	41	40	42	£ 4	2	38	37	37	38	38	8	41	45	\$ 4	;
December	max	46	3	42	42	42	42	39	39	2	\$ 8	98	2 5	\$ \$	43	42	4	4 4	42	30	38	38	39	39	41	45	48	2 2	;
nber	uju	52	49	48	48	49	8	47	4:		7	8 4	9 9	200	2,5	2	22	24	75	23	20	48	41	46	42	45	8,	9 !	
November	max	4.2	25	48	49	49	49	48	8 4	, c	8 4	\$ C	A C	25 25	7	32	28	57	24	22	53	20	48	47	49	94	4:		-
ner.	nim	8 8	89	88	69	20	2	62	98	2	. F	29	\$ 3	2	-	: 8	24	5.5	4	23	23	25	20	83	24	26	8 5	2 2	;
Octobe	max	25	9	69	2	11	F	2	62	10	62	23	5 8	8 8	2	19	20	24	5	25	53	8	2	2	28	28	200	2.5	5
Day		1.2	6	•							111	13		15		17.	18.	20.	21				•••••••••••••••••••••••••••••••••••••••					31.	_

PEE DEE RIVER BASIN

LUMBER RIVER AT MAXTON, N. C.

LOCATION: --At bridge on county road, 1 mile east of Maxton, Robeson County, and 1.2 miles downstream from Atlantic Coast Line Railway bridge.
DRAINAGE AREA, --359 square miles.
RECORDS AVAILEMELE. --Chemical analyses: October 1954 to September 1955.
Water temperatures: October 1954 to September 1955.
REMARKS, --No discharge records available for this station.

water year October 1954 to September 1955 Chemical analyses, in parts per million.

Chloride Fhoride (Ntr. (Cl) (NT S.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Bicar- bonate (SO ₄) (HCO ₂) 2 4.5 2 4.5 2 4.5 3 3.6	Potas-Bic Sium bon (K) (HC 0.6 .4 .5	Sodium (Na) (Na) (Na) (Na) (Na) (Na) (Na) (Na)	Ma nest (Mg	4 B - 4 B - 9	0.80	Fron Caure (Fe) (Caure 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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3.5 .0	2 2.5	4 .	2.3	600	۳. -	1.0	
•	4 1.5	۳.	2.3			80.	80.
0.	2,8	₩.	2.8			1.2	1.2
3.2 00	5 1.3	8 0.	2,3		.2	1.2	
•	3 2.5	4.	2.7	62		1.2	1.2

a Organic matter present; sum of mineral constituents 22 parts per million. Borganic matter present; sum of mineral constituents if parts per million. c Organic matter present; sum of mineral constituents is parts per million. d Organic matter present; sum of mineral constituents is parts per million. e Organic matter present; sum of mineral constituents 15 parts per million. I Organic matter present; sum of mineral constituents 21 parts per million. Gorganic matter present; sum of mineral constituents 21 parts per million.

PEE DEE RIVER BASIN--Continued

MISCELLANBOUS ANALYSES OF STREAMS IN PEE DER RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA

Discharge Silica Fron Cal Mage Sochim Folian Silica Sochim Folian Silica Sochim Solian Solia					Se la company	mical ana	lyses, in p	arts per n	ullion, wa	ter year Oc	Chemical analyses, in parts per million, water year October 1954 to Beptember 1955	to Septem	1955	Dissolved	Hardness as CaCO.	ness CO.	Specific		
23.0 1.0 0.02 1.8 0.08 3.2 1.0 0.08 2.5 1.0 1.3 1.5 1.5 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Date of collection	Discharge (cfs)	Silica (SiO ₂)	Fon (Fe)	cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	bonate (HCO ₈)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)		(residue on evap- oration at 180°C)	Calcium, mag- nesium		ance (micro- mhos at 25°C)	Hq	Color
23.6							MULBERRY	CREEK 1	WEAR NOR	TH WILKE	SBORO, N.	ن ن							
23.0 1.8 0.08 2.5 0.9 14 2.0 0.1 1.0 34 8 1 28.2 6.8 E8	July 28, 1955				2.8	2.0			22 20	3.9	.5 .5				16 8	00	55.8 33.5	6.7	
23.0 1.8 0.02 2.6 0.8 2.5 0.9 14 2.0 1.5 0.1 1.0 34 8 1 26.2 6.8 1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1							FIS	HER RIV	ER NEAR	COPELAND	, N. C.								
FORBUSH CREEK NEAR YADKINVILLE, N. C. 23.0 23.4 13 0.09 3.2 1.8 1.8 1.5 1.5 1.5 1.5 1.5 1.5	Mar. 23, 1955 Sept. 13.		=	0.02	1.8 2.0	8.0 8.	2.5	6.0	6 41	2.0	1.5	0.1	1.0	34 a 29	∞ ∞	10	26.2 31.4	6.8	က
1. 23.0 1. 1. 1. 1. 1. 1. 1.							FORBI	ISH CREE	K NEAR Y	ADKINVIL	×								
HUDDY CREEK NEAR CLEMMONS, N. C. 8.44 9.2 9.50 YADKIN RIVER AT YADKIN COLLEGE, N. C. 2.00 2.00 2.00 3.7 0.101 6.9 7.0 101 6.9 7.0 102 7.0 103 7.0 101 6.9 7.0 102 7.0 103 7.0 103 7.0 103 7.0 103 7.0 103 7.0 104 8.9 7.0 105 7.0 107 7.0 107 7.0 107 7.0 107 7.0 107 7.0 107 7.0 108 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7	Mar. 23, 1955		-	ە. ھ	8.8 6.8	1.8	3.9	1.3	18 23	1.5	1.5 2.2	0.1	0.8	45 a 38	15 13	00	43.1 50.1	6.9	2
8.44 9.2 3.6 5.5 2 2.0° 0.5 37 0 101 6.9 7.0 8.44 9.2 3.4 5.5 2 3.0 0.5 37 0 101 6.9 10 10 1.0 1.5 1.1 2.2 1.9 1.0 2.8 2.9							¥	IDDY CREI	EK NEAR	CLEMMONS	, N. C.								
YADKIN RIVER AT YADKIN COLLEGE, 14. C. 10.00 6.3 0.00 2.6 1.3 2.2 1.9 10 5.4 2.0 0.1 2.3 37 12 4 5.5 1.5 0.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1	Oct. 6, 1954	9.30 8.44			9.0	3.5			55 53	88	3.0		0.5		37	00	101	6.9	
7, 1955 b18,100 6.3 0.00 2.6 1.3 2.2 1.9 10 5.4 2.0 0.1 2.3 37 12 45 15 0 55.1 6.6 2 30 2.00 2.6 1.5 7.1 2.2 31 2.9 6.0 2.8 1.8 45 15 0 55.1 6.6 - 1.5 15 1.5 1.5 1.5 0 55.1 6.6 2.5 15 1.5 1.5 1.5 0 5.5 1.5 0 0.0 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5							YADKI	N RIVER	AT YADK	IN COLLEC	₹.								
7, 1985 61.0 61.0 1.8 1.6 7.1 2.4 1.7 21 2.1 2.0 0.0 0.6 43 11 0 38.4 7.1 2.0 2.0 2.5 2.3 14 0.03 3.6 1.1 2.4 1.7 21 2.1 2.0 0.0 0.6 43 14 0 41.4 6.7 1.1 2.0 2.0 2.5 2.3 2.1 1.0 0 2.1 4.1 4 0.0 3.5 2.1 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Feb. 7, 1955 Mar. 30 Sept. 15		6.3	8 1 2	24.0	1.1	2.2	1.9	10 31	4.0%	0.80	1.0	1.8	37 45 256	12 15 19	400	39.2 55.1 77.4	6.6	22 ; 1
. 61.0 43 1.8 1.6 1.7 21 2.1 2.0 0.0 6 43 11 0 36.4 7.1 2.1 2.1 2.0 0.0 5.5 a.37 14 0 41.4 6.7							BOC	KY RIVE	R AT TUR	NERSBURG									
	Apr. 7, 1955 Sept. 28	81.0 32.1	41	0.03	3.6	1.6		1.7	17	3.6	1.5	0.0	9.0	43 a 37	11	00	36.4	7.1	ıo

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May 27, 1955	164 77.5	15	0.01	3.6	1.1	4.8	1,5	26	2.3	2.0	0.0	8.6	a 39	13	00	50.2	7.4	27
						H	UNTING C	REEK NEA	HUNTING CREEK NEAR HARMONY, N. C.	, N. C.								
Apr. 7, 1955	128 45.2	13	0.02	3.2	1.0	2.6	1.5	12	1.6	1.5	0.0	9.0	a 34	12 8	00	28.6 37.5	7.0 6.6	9
						nos	TH YADKI	N RIVER	SOUTH YADKIN RIVER AT COOLEEMEE, N. C.	KEE, N. C								
Mar. 31, 1955 Apr. 7	414	4 E	0.00	8.8.8	4.1.	2.9	1.0	c72 622	3.0	2,2,2	0.0	8.0.	39	11 15	000	47.2 142 126	8.9.8	4 ; 5
							THIRD CR	EEK AT C	THIRD CREEK AT CLEVELAND, N. C.	×. c.		:	,		· 			
May 27, 1955	37.6	22	0.07	6.6	3.2	4.6 5.5	1.9	39	3.5	2.8 5.5	0.1	1.8	a 65 a 71	31	00	85.3 96.6	7.0	22 23
							SECOND C	REEK NEA	SECOND CREEK NEAR LIBERTY, N. C.	N. C.								
Oct. 2, 1954.	3.95			41.11	5.8			98 68	3.1	3.5		0.3		58	00	158 127	7.2	
							ABBOTTS	CREEK AT	ABBOTTS CREEK AT LEXINGTON, N. C.	I, N. C.								
Apr. 14, 1955	101	7.1	0.05	4.4	3.3	14.8	1.8	21 58	4.6	12.8	0.1	3.0	53 a.103	81 44	-10	55.7 110	6.9	22 32
Sept. 15	19.8	21	5	=	3.5	21		69	2.2	22	.2	3.1	a 121	42	0	202	6.9	16
a Sum of determined constituents. c Includes equivalent of 27 parts per mi	tituents.	o aoillion	lion of carbonate (CO.)	te (CO.)														

PEE DEE RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PER DER RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued

			6	emical an	alyses, t	n parts pe	r million,	water year	October 19	Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	mber 195	Continu	pe					
				اً	70.2		Dotos	Bicer-		,	:		Dissolved solids	Hardness as CaCO,	ness ICO,	Specific conduct-		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	ctum (Ca)	nesium (Mg)	Sodium (Na)	sturn (K)	bonate (HCO ₅)	Sulfate (SO ₄)	Chloride (C1)	Chloride Fluoride (C1) (F)	Nitrate (NO _s)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	mhos at 25°C)	Hd	Color
		:				YA	DKIN RIV	ER AT HIO	YADKIN RIVER AT HIGH ROCK, N. C.	N. C.								
May 18, 1955	3,370 4,870	13 13	0.03	5.5	1.2	5.7 8.5	1.6 2.5	27 32	4.7 3.7	3.5 5.8	0.0	1.6	a 48	17	00	70.3 86.7	6.6	12
						LICK	CREEK NE	AR HEALI	LICK CREEK NEAR HEALING SPRINGS, N.	.S, җ, C.								
Oct. 2, 1954	0.59			7.0	1.5			46 30	3. 6.6	4.5		1.2		24	0	108 84.3	7.5	
						UMB	ARRIE RI	VER NEAR	UWHARRIE RIVER NEAR ELDORADO, N. C	э, и. с.								
Feb. 24, 1955	156 107	13	0.01	5.5	1.3	3.6	1.4	30	4.8. 8.8	3.8	0.0	0.1	60 a 44	23 16	0	72.1	7.2	15
						MALL	ARD CREE	K NEAR H	MALLIARD CREEK NEAR HARRISBURG,	3, N. C.								
Oct. 4, 1954 Sept. 9, 1955	0.16 3.37			14 10	6.3			82 67	3.0	8.5		1.3		60 46	00	153 121	6.9	
						32	EDY CREE	K AT ROC	REEDY CREEK AT ROCKY RIVER,	, N. C.							•	
Oct. 4, 1954	0.39 3.88			13 12	6.7			88 76	2.8 8.5	3.5		1.1		20	00	155 134	8.0 7.3	
						BIG	BEAR CRE	EK NEAR	BIG BEAR CREEK NEAR RICHFIELD, N. C.	о, м. с.								
Feb. 24, 1955	15		:	6000	999			16 20	4.6.0	8.3		0.6	44 44	17	4-0	62.0	7.1	
a Sum of determined constituents.	ustituents.	- 1	31.0	9.	9.6	1.0	*.7	*6	9.6	a ii	9	1.0	20.28	69		90.0	0.0	9

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						3	CAI RIVE	K NEAK A	MOCRI KIVER NEAR NORWOOD, N. C.	ر. د								
Feb. 23, 1955	567 358	6.4	9.	6.4	3.0	10	2.3	42 28	5.4	10 8.2	0.0	0.0	a 53	27 16	00	125 92.2	6.6	08
						BR	OWN CREE	Y NEAR P	BROWN CREEK NEAR POLKTON, N.	и. с.								
Feb. 23, 1955	19	9.5	0.43	3.4	1.8	5.8	2.7	14 34	4.2	8.8 5.5	0.1	2.0	57 a 57	16 27	0 0	75.3 92.3	7.1	26
						1	ITTLE RIV	FR NEAR	LITTLE RIVER NEAR STAR, N.	. c.								
Feb. 24, 1955	436	17	0.03	8.8 8.8	1.4	3.8	1.2	22 23	3.1.5	2.5	0.1	0.0	a 45	13	00	47.9	6.9	81
						PEE	DEE RIVE	R NEAR R	PEE DEE RIVER NEAR ROCKINGHAM, N. C.	M, N. C.								
Feb. 23, 1955	8,080 6,800	8.7	0.03	4.1	1.7	7.6	2.0	30	3.9	5.2	0.1	1.1	54 a 50	11	00	69.7 77.5	6.9	10
						T.Y.	NCHES RI	VER NEAR	LYNCHES RIVER NEAR BETHUNE,	. s. c.								
May 4, 1955	59.1 96.3	6.0	0.50	2.0 1.9	1.0	3.5 9.5	9.0	12	3.3	3.5	0.0	0.3	37	& 0	00	39.5	6.6	33
						LITTLE	LYNCHES	RIVER N	LITTLE LYNCHES RIVER NEAR BETHUNE,	ö	o.							
May 4, 1955	45.2 65.4	5.5 7.5	0.66	1.9	0.6	3.6	0.8	ဗထ	6.8 7.7	3.2	0.0	0.0	82	10	3.6	36.8 36.7	6.4	6 5 27
						170	MBER RIVI	ER AT BC	LUMBER RIVER AT BOARDMAN, N	. C.								
Feb. 1, 1955	1,240	89.	0.67	2.4 1.8	7.0	8.8	1.1	24	8 4. 2.	4 2. 8.	0.0	6.0	a 29	0. 0	r- 80	61.4 43.5	5.0	190
a Sum of determined constituents	constituents.																	

SANTEE RIVER BASIN

CATAWBA RIVER AT CATAWBA, N. C.

95	
4 to September 1	
195	
October	
/ear	
water year (
million,	
per	
in parts per m	
5	
analyses	
Chemical	

	ned ned	Fil- tered	2.4	5	7 7	5	7	2.5	2	9	1	:	9 .	9.8	3.0	;	;	;	6.2	8.8	2.3	2.0
	Oxygen	Unfil- tered	2.7	5.2	3.0	2.2	2.6	0.4	6.	4	;	;	3.6	5.6	1	;	;	;	6.9	4.5	3.5	2.3
		Color	15	~	ន	∞	-	60	ď	-	5	c	s	ព	∞	;	:	60	~	~	es	4
	1	Hd.	6.9	7.0	6.9	6.9	7.0	6.9	6.9	7.1	7.0	7.0	7.0	7.0	7.0	4.1		7.1	6.9	6.9	6.7	7.2
	Specific conduct-	(micro- mhos at 25°C)	56.5	55.7	58.2	58.9	57.4	57.8	28.0	58.0	90.9	57.2	58.6	57.7	54.5	156	37.3	56.2	58.5	57.8	53.5	51.0
	ess CO,	Non- carbon- ate	٥	0	0	0	0	0	c	0	0	0	0	0	0	24	0	0	0	0	0	0
55	Hardness as CaCO ₃	Calcium, mag- nestum	14	13	4	13	14	22	67	13	13	13	13	13	12	24	24	13	12	12	11	=======================================
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved. solids	on evap- oration at 180°C)	39	88	33	8	43	42	4	17	42	39	42	39	42	;	;	44	47	9	37	35
954 to Se	Nitrate	(NO ₃)	0.5	ć	Φ.	9.	4	9.	~	9	φ.	9	e,	~!	4.	8.2	4.6	∞.	ĸ.	63.	1.0	6.
October 1		ride (F)	0.1	0.	-:	-:	-	Τ.	-	. 0		0	0	-:	-	;	ŀ	0.	-:	-:	-:	 -:
er year	Chlo-	(C)	4.5	4.5	4.5	5.0	8.8	5.2	20	20	5.5	5.0	5.5	5.2	5.2	5.8	4.5	5.8	5.5	5.0	4.5	4.0
llion, wa	Sulfate	(°0s)	3.5	8.8	4.0	3.7	4.0	3.6	6	0	6	5	4	5.9	4.7	1	-	4.2	4.3	4.	3.9	3.7
ts per mi	Bicar -	bonate (HCO ₃)	21	19	20	20	20	8	ģ	2	ន	20	22	18	20	2	37	8	8	21	17	91
s, in par	Po- tas-	stum (K)	1.4	1.2	1.4	1.2	1.2	1.6	4			7	7.7	1.2	1.0	;	1	1.3	1.2	1.2	7.4	1.2
al analyse	Sodium	(Na)	8.4	5.5	8.8	5,3	5.3	5.9	5		2.8	C.	6.5	5.8	6.6	1	:	6.3	6.4	6.2	5.1	4.3
Chemic	Mag- ne-	sium (Mg)	1.5	1.3	1.5	1.3	1.2	1.5	-	:-	1.2	7	1.4	1.4	1:1	2.4	1.4	11	6.	∞.	6.	1.0
	Cal-	Ca)	3.3	3.0	8.8	3.1	3.4	3.0	6	4	3.0	0	5.0	3.0	3.2	5.6	7.4	4.6	8.4	3.	9.0	2.8
		(Fe)	0.01	8	10	8	8	8	8	38	8	2	8	8	20.		:	10	5	8	8	8
	Silica	(SIO ₂)	7.0	6.5	8.7	7.9	7.1	8.8	u		2.0	8	80	8.5	7.0	:	:	8.7	6.3	8	8.7	2.8
	weam	discharge (cfs)						742						383								2,000
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	70 1-10	Dec. 11-20	Dec. 21-31	Jan 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 112	Feb. 12-134	Feb. 14-19	Feb. 20-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

a Analyses for Feb. 11, 12-13 are not believed to be representative of the stream. Values are not included in the extremes and averages for the station. b Contains 1.3 parts per million acidity as H+. Mar. 21-31 2,000

2.1 2.1 3.1 2.4	0 4 4 6 6 1 0 4 4 6 6 1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	2	0 2 4 8 4
8 L 4 & & L	5 9 0 4 1 0	7 10 10 10
6.8 7.1 7.0 4.7 4.9	E. 4. 4. 8. 0. 7. 0. 7. 0. 0. 7. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	1.0.0000
44.0 44.0 44.0 43.9 43.9 46.6	45.5 44.3 46.3 46.3	0 0 0 0 1 1 1 1 1 0
	3 4 4 4 4 8	8688888888888
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115 101 130 130	13 2 2 4 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1	13 11 13 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13
38 38 38 88 88 88 88 88 88 88 88 88 88 8	38 37 39 39	8 8 1 4 8 8 8 8
		88884188
8.0 0.1 0.1 0.1 0.8 8.8	1.1 8. 1.0 1.0	1.1 .8 .7 .7 .8 .8 .1.0
		0101110
4.4.8.8.8.8.8 8.0.10.6.6.6	8.8.8.8.8 0.80000	2. 4. 4. 4. 6. 7. 4. 4. 6. 7. 4. 6. 7. 4. 6. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.
	0.00000 0.44500	8.000.000.00 8.000.000.00 8.000.000.000
16 15 14 16 17	16 17 18 16 17 17	18 20 20 20 20 20 20 18
2.1.2.4.1.2.4.1.2.4.1	1.5	4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4.4.8.8.9.1.1.1.0.8.9.7.8.9.7.8.9.9.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	. 4 4 4 0 0 0 4 - 0 0 7 1 8 8
1.1 6. 8. 0.1	2.1 1.5 4.1 1.0 1.0	1.23
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.00 00 00 00 0.00 00 00 00 0.00 00 00 00	* 1 2 2 2 2 2 2 2 1 .
8888188	828888	8.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0
0. 5. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	9.5 9.7 9.7 9.7 10	9.9 9.9 9.3 9.1 8.7 4.8
723 3, 580 1, 580 1, 020 1, 020 1, 810 991 1, 270	954 1,120 1,400 573 1,920 1,800	2, 050 1, 810 1, 930 1, 480 1, 420 1, 990 1, 120
Apr. 1-10, 1955 Apr. 11-20 Apr. 21-30 May 1-10 May 3 May 11-20 May 21-31	June 1-10 June 11-20 June 21-31 July 1-10 July 11-20 July 21-31	Aug. 1-10 Aug. 11-20 Aug. 21-31 Sept. 1-10 Sept. 11-20 Sept. 16 Sept. 21-30

SANTEE RIVER BASIN -- Continued

CATAWBA RIVER AT CATAWBA, N. C .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at 7 a.m..7

Day	Oct. 77 76	Nov.	Dec.	Jan.	Feb.	Mar.			_			
2		-			rep.	mar.	Apr.	May	June	July	Aug.	Sept.
2	70	58	48	45	39	48	48	61	67	72	78	76
	(0	59	48	46	42	46	51	62	67	75	77	75
	75	54	46	45	41	49	51	59	67	78	77	74
3 4	74	55	46	45	39	48	54	61	67	77	76	73
5	75	55	46	47	39	52	50	62	72	77 74	77	75 74 73 73
6	76	53	43	46	40	57	52	62	74	76	75	74
7	71	53	46	45	41	48	53	63	70	74	77	74
ġ (65	53	43	44	44	48	51	66	67	75	78	74
9	68	54	45	45	40	46	51	65	66	75	77	74
10	70	55	45	46	40	48	56	61	68	76	77	74 74 74 74 73
11	70	52	43	44	44	50	58	63	69	79	76	75
12	71	52	44	44	40	53	55	64	67	75	76	76
13	72	54	44	44	37	51	56	64	69	74	75	73
14	72	53	43	41	38	53	56	64	69	74	76	70
15	72	52	45	43	38	52	57	65	67	74	75	75 76 73 70 70
16	67	54	44	43	39	52	56	65	67	74	75	71
17	63	55	45	41	43	51	56	63	68	77	75	71
18	61	55	45	41	40	50	56	63	69	81	76	73
19	63	56	43	39	40	50	59	63	69	76	76	74
20	62	55	41	41	44	49	59	64	71	76	75	71 71 73 74 73
21	63	54	41	40	46	50	50	65	70	75	77	73
22	61	51	41	41	44	54	58	67	70	76	80	73
23	62	53	42	41	45	49	61	69	70	76	76	74
24	62	52	40	41	44	49	63	67	71	76	76	74
25	62 62	52 51	41	41	43	50	62	67	71	79	74	73 73 74 74 73
26	61	51	41	40	43	51	60	66	72	77	75	70 70 71 70
27	63	49	42	43	46	50	58	63	75	77	74	70
28	63	49	44	40	45	48	58	68	70	77	76	71
29	63	48	46	40		47	58	69	70	77	78	70
30 31	61	48	45	40	!	47	59	72	71	77	76	71
31	58		44	38	ļ ,	47		67		78	76	
Aver- age	67	53	44	43	42	50	56	65	69	76	76	73

SANTEE RIVER BASIN

INDIAN CREEK NEAR LABORATORY, N. C.

LOCATION. --Temperature recorder at gaging station on left bank 250 feet upstream from remains of Rudisill Mill Dam, half a mile upstream from highway paries at miles specified in miles specified in the specified of Lincolnton.

BALINGER ARIA, --68.4 square miles.

RECORDS AVAILABLE. --Mater temperatures: January 1953 to September 1955.

EXTREMES, 1964-55. --Mater temperatures: Maximum, 82 F July 19, 28, minimum, 35 F Dec. 8, Jan. 19.

RECORDS ARIA, 1953-55. --Mater temperatures: Maximum, 84 F Aug. 1-2, 5, 1953; minimum, 35 F Jan. 15, 1954.

REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1383.

Temperature (°F) of water, water year October 1954 to September 1955 /Continuous ethyl alcohol actuated thermograph/

ı	ı	ı																														1	1
	mber	min	22	2 ;	200	A 0	9 6	2 5	2 5	2 :	69	02	2	29	63	63	49	65	29	69	99	99	8	2 1	2	69	99	63	49	99	64	1	8
	September	тах	74	2	2:	= =	: ;	5 5	6 %	2 2	£ 55	75	74	52	69	69	12	7	22	2	2	72	2.	e :	7	7	69	29	89	2	72	:	22
	ust	min	45	7 1	2 1	C E	2 }	£ 5	9 2	£ ;	6.42	74	74	72	52	73	74	74	74	92	42	2	2	2	2	E	11	69	71	2	22	74	42
	August	max	22	3 8	2 8	3 5	3 3	2 2	2 8	3 2	2 2	77	2	92	22	92	45	45	82	42	8	42	2 1	2 1	2	22	75	75	92	92	28	2	2
	ly .	min	89	80	2 ;	::	2 6	2 2	2.5		3 2	74	22	72	72	73	74	74	75	78	92	74	27	4	92	92	92	75	77	11	75	75	74
	July	max	75	9 1	= 6	2 2	2 6	9 2	2 2	2 6	= =	92	75	5	23	18	62	8	81	82	8	92	2	2	20	82	81	8	82	2	48		28
	e e	min	62	63	2	6 4	3 5	2.0	0 0	20 00	8 8	64	63	63	64	19	63	64	99	99	29	69	8	6.0	69	2	7	69	67	67	89	-	65
	June	max	2.9	60	20 00	3 5	: :	25	2 8	ם מ	65	29	29	29	29	29	69	69	69	69	72	74	7.	4	22	22	22	7	72	72	74		2
	£.	min	69	20.0	2 2	10	3 8	20 5	200	70.5	3 5	65	65	63	63	62	65	62	63	62	64	67	65	99	67	29	67	69	69	2	89	4	2
	May	max	65	ç ;	6	. 0	3 8	200	80	9 6	8 8	22	69	65	65	65	63	99	65	67	69	69	2.9	29	69	7	72	73	74	74	73	89	89
rapn/	11	min	48	20	22.5	70	3 3	X :	2 6	70.5	7 Z	29	29	62	29	28	29	9	61	63	2	62	61	9	64	61	28	22	24	22	28	1	28
ermog	April	max	22	2 3	20.0	200	9 [2.6	3 5	70	S 2	8	65	65	83	63	64	65	29	69	69	99	2.9	9	99	65	62	19	63	2	4		63
nared 11	ch	min	22	2	7 5	20	9 6	200	2 4	2 9	2 5	25	28	28	22	25	54	53	25	20	48	20	2 :	£ :	48	21	52	43	43	45	45	48	27
onol act	March	max	29	20 1		01	3 8	0 0	20 00	3 :	£ 83	61	63	62	29	22	6	28	54	23	20	53	20	25	22	22	26	25	47	25	53	22	22
nyl alc	ary	min	37	£ :	£ 6	200	3 6	2 .	14	2:	1 2	46	39	36	36	37	40	45	45	43	46	4.1	£ :	7	4.	45	46	46	21	:	ł	:	43
Continuous ethyl alcohol actuated thermograph	February	max	43	4.	~ ;	£ -	; ;	41	40	9 9	6 4	48	46	39	38	42	45	49	49	41	48	49	21	2.6	22	49	49	53	23	!	;	1	4
Contr.	ry	min	46	4.	9 1		5 6	2 8	ę ;	;	5 5	45	44	41	37	33	42	38	38	35	37	36	80	20.	33	39	37	40	41	40	38	36	4.1
	January	max	47	2.5	2 5	20	3 8	200	20.00	2 :	÷ 5	46	46	45	41	44	44	42	41	41	39	38	2:	2 :	40	41	41	42	53	42	41	49	4
	ber	min	7	4.	8 8	200	3 :	41	2 5	9 6	38	37	39	41	41	42	39	41	43	43	40	37	3	36	33	88	37	39	45	49	21	45	40
	December	max	\$	43	2.4	, c	‡ \$	2.	1 00	÷:	1 4	40	41	41	45	45	43	43	45	45	£3	4	9	5	42	42	38	45	49	54	22	5	43
	ber	min	44	46	2 :	4.5	2 :		77	# \$	2 4	44	43	45	45	46	49	20	53	26	26	25	¥:	- t	4.	45	45	4	43	43	41	1	45
	November	max	47	4.	9 9	2 5	; ;	9 ;	# 7	; ;	4 4	47	46	48	48	49	20	23	26	20	28	26	25	2	6	48	46	45	43	4	4	-	48
	er	min	112	69	20 5	200	3 2	= 6	20 00	3 5	20 5	09	62	84	65	90	53	20	20	23	20	49	20 5	2 :	49	6	20	53	29	24	51	46	22
	Octob	max	7.5	22	£ ;	C E	2 6	9:	4.0	200	65	29	89	2	69	88	09	22	55	26	54	23	25	20	2	23	53	28	58	29	28	2	62
		Day	1	, , , , , , , , , , , , , , , , , , ,		, u		2	- 00		10.	11	12	13	14	15	16	17	18.	19		21		23	24	za	26	27	28	29.	30	1	Average

SANTEE RIVER BASIN -- Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SANTEE RIVER BASIN IN NORTH CAROLLINA AND SOUTH CAROLLINA

		Œ	SCELLA	TEOUS A	NALYSES	OF STRE	AMS IN S/	INTEE RIV	VER BASIN ter vear Oc	S ANALYSES OF STREAMS IN SANTEE RIVER BASIN IN NORTH CAROLINA AND Chemical analyses, in marts ner million, water wear October 1954 to Sentember 1955	CAROLIA o Sentemb	A AND S er 1955	MISCELLANEOUS ANALYSES OF STREAMS IN SANTEE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA Chemical analyses, in naris ner million, water vear October 1854 to Sentember 1855	INA				
				-le	Mag-		Dotas.	Bicor					Dissolved	Hardness as CaCO,	ness CO,	Specific conduct-		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	(Fe)	cium (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Нd	Color
						DAVI	DSON CRE	EK NEAR	DAVIDSON CREEK NEAR CORNELIUS, N.	S, N. C.								
Oct. 4, 1954 Sept. 21, 1955	1.27			9.5	2.6			48 54	4.1	3.2		1.0		35	00	96.8	7.0	
						DUTC	HMANS CR	EEK NEAR	DUTCHMANS CREEK NEAR STANLEY,	, N. C.								
Oct. 4, 1954	3.52 7.78			4.4	1.7			30	3.4	1.8		0.1		18 22	00	58.3 67.8	7.5	
						F	OYD CREEK	NEAR CI	FLOYD CREEK NEAR CLIFFSIDE,	ж. с.								
Oct. 5, 1954 Sept. 22, 1955	5.95 6.84			2.2	0.9 8.			18 20	1.5	3.0		1.6		9.	0 0	45.5	7.0 6.8	
						SEC	OND BROA	D RIVER	SECOND BROAD RIVER AT BOSTIC,	C, N. C.								
Oct. 5, 1954	42.9			3.2	1.5			54 28	12 8.5	26 35		3.3		14	0 0	204	6.8 6.6	
						FIF	ST BROAD	RI VER N	FIRST BROAD RIVER NEAR CASAR,	R, N. C.								
Oct. 5, 1954 Sept. 21, 1955	15.2 14.5			3.3	1.5			19	1.3	1.5		1.0		12 15	00	37.6	6.7 7.0	
						LIT	TE RIVER	NEAR SI	LITTLE RIVER NEAR SILVERSTREET,	ET, S. C.								
Apr. 20, 1955	155 96.6	23	0.04	6.3 5.5	1.9	6.6	2.2	38	4.3	4.2	0.1	0.6	73	24 25	0 0	83.6 85.7	7.3	7 6
						Ö	CONGAREE CREEK NEAR CAYCE	EEK NEAR		s. c.		•						
May 10, 1955	73.2 90.0	0.5	0.18	1.0	4.0	0.9	0.0	4.00	0.7	1.5	0.0	0.0	15	40		12.9	5.9	35

MISCELLANEOUS ANALYSES OF STREAMS IN SAVANNAR RIVER BASIN IN SOUTH CAROLINA SAVANNAH RIVER BASIN

1		-						-	Constitution of the contract o									
	-			Cal-	Mag-	17.00	Potas-	Bicar-	,		i		Dissolved	Hardness as CaCO,	sss O	Specific conduct-		
Date of collection	Discharge (cfs)	(SiO ₂)	(Fe)	cium (Ca)	nesium (Mg)	(Na)	sturn (K)	bonate (HCO ₃)	(SO ₄)	(C1) (F) (NO ₃)	Filtor ide (F)	(NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Hd	Color
						S	HAUGA RI	VER NEAR	CHAUGA RIVER NEAR WESTMINISTER	ISTER								
Mar. 16, 1955	99.2	=	0.00	2.1	1.3	0.00 2.1 1.3 2.1	8.0	16	1.6	2.0	0.0 0.2	0.2	30	ı	0	32.3 6.9	6.9	s.
May 25	173	=	90.	2.9	о .	2.1	1.0	16	1.7	1.0		æ.	58	11	0	4.82	7.5	17

SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS, OGEECHEE RIVER TO PEARL RIVER PART 2B.

JANE GREEN CREEK NEAR DEER PARK, FLA.

ST. JOHNS RIVER BASIN

LOCATION.--At gaging station at highway bridge, 14 miles southeast of Deer Park, Osceola County, and 2 miles downstream from confluence of Crabgrass and Bull Creeks.

BALLALE CREEKS.--248 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.

ETHEMARKS.--Falues reported for dissolved solids are sums of determined constituents. Records of discbarge for water year October 1954 to September 1955 given in WSP 1384. Chemical analyses, in parts per million, November 1954 to September 1955

ND E	ASTERN	GU	L	•	OF	ME.	ΧI	CO	B
	Color					150			
	pH	6.6	9.9	7.2	9.9	6.4	5.9	6.4	8.9
Specific conduct-	ance (micro- mhos at 25°C)	74.6	88.5	95.7	123	125	158	79.1	62.4
ness CO ₃	Non- carbon- ate	∞	7	12	15	12	7	6	2
Hardness as CaCO ₃	Calcium, mag- nesium	23	92	28	36	32	34	24	19
	solids (sum)	44	24	52	63	24	91	43	32
	(NO ₃)	0.3	٦.	٥.	٦.	4.	8.7	9.	۲.
i	Fluoride (F)								
	Chloride (C1)	13	16	18	22	77	26	12	6.5
3	Sulfate (SO ₄)	3.0	3,5	5	1.5	ω,	5.0	7.5	3.0
Bicar-	bonate (HCO ₃)	18	14	20	3 6	24	24	19	17
Potas-	Sium (K)	2	2	4	_	8,5		6	4
ç	Na)	9	ιά	-	<u>∞</u>		14	*	3.
Mag-	nesium (Mg)	1.3	1.2	1.2	2.2	1.1	2.2	∞.	6.
Cal-	cium (Ca)	7.1	8.4	9.4	=	11	2	8.5	6.1
<u>.</u>	(Fe)	0.24	8	80.	Ξ.	92	8	. 12	. 14
	(SiO ₂)	3.7	12	3.2	5.3	1.9	18	4.0	3.8
Mean	discharge (cfs)	1,180	116	203	18	6	0	228	423
	Date of collection	Nov. 17, 1954	Dec. 15	Feb. 4, 1955	Mar. 16	Apr. 26	June 7	July 20	Sept. 1

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR MELBOURNE, FLA.

LOCATION.--At gaging station, 10 feet upstream from bridge on U. S. Highway 192, 1.0 mile downstream from Sawgrass Lake, 1.5 miles upstream from Lake Washington, and 9.2 miles west of Melbourne, Brevard County.

DRAINGARRA.-874 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.

REMARKS.--Values reported for dissolved solids are residues on evaporation at 180°C. Records of discharge for water year October 1954 to September 1935 given in WSP 1384.

Chemical analyses, in parts per million, November 1954 to September 1955

	Color	100	110	70	8	45	8	280	210
	Hd	9.9	6.5	7.3	6.7	6.5	9.9	9.9	6.5
Specific conduct-	ance (micro- mhos at 25°C)	91.3	115	119	140	154	172	103	8.06
ness .co,	Non- carbon- ate	2	18	11	13	91	14	~	6
Hardi as Ca	Calcium, Non- mag- nesium ate	83	32	29	. 88	36	35	28	28
Dissolved solids	(residue on evap- oration at 180°C)	52	61	62	1.1	22	49	54	20
	(NO ₃)	0.2	٥.	٥.	٥.	ſ,	•	۳.	۰.
:	Fluoride (F)								
	(C1)	18	24	25	82	30	34	16	14
	(80°)	2.0	2.5	2.0	7		3.0	8.6	3.5
Bicar-	bonate (HCO ₃)	22	17	22	24	22	22	24	23
-setod	sium (K)		3.6	-	13	_	17	3.0	3.6
·	Sodium (Na)	7	_	=	2		11	_	
Мас-	nesium (Mg)	1.3	2.4	2.7	2.3	2.1	4.	1.1	1.5
Cal-	cium (Ca)	7.1	8	8.2	9.4	==	9	9.4	8.7
	(Fe)	0.15	6	90.	8	6	8	.15	.11
1113	(SiO ₂)	2.5	6.2	1.4	4.5	8	۳.	3.9	4.5
Mean	discharge (cfs)	1,000	684	602	92	0	в 0	1,000	1,080
	Date of collection	Nov. 18, 1954	Dec. 15	Feb. 1, 1955	Mar. 17	Apr. 28	June 7	July 20.	Sept. 2

a Stage-discharge relation indefinite; discharge estimated on basis of records for nearby stations.

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR COCOA. FLA

approximately half a mile downstream from outlet of Lake Poinsett, 10t miles west of Cocoa, Breward County. LOCATION. --At State Highway 520, app DRAINAGE AREA. --1,237 square miles.

CORDS AVAILABLE.--Chemical analyses: October 1953 to September 1955 Water temperatures: October 1953 to September 1955. RECORDS AVAILABLE .-- Chemical analyses:

EXTREMES, 1954-55.—Dissolved solids: Maximum, 436 ppm June 11-20; minimum, 130 ppm Nov. 11-20.

Rarchess: Maximum, 108 ppm June 11-20; minimum, 48° Fbb. 15.

Specific conductance: Maximum, 89° Aug. 13; minimum, 48° Fbb. 15.

Whater temperatures: Maximum, 89° Fug. 13; minimum, 48° Fbb. 15.

Whater temperatures: Maximum, 480° ppm June 11-20, 1955; minimum daily, 107 micromhos Oct. 21-31, 1953.

Rarchess: Maximum, 108 ppm June 11-20, 1955; minimum, 30° ppm Oct. 21-31, 1953.

Rarchess: Maximum, 108 ppm June 11-20, 1955; minimum, 48° Fbb. 15, 1955.

Specific conductance: Maximum, 48° Fbb. 15, 1955.

Nater temperatures: Maximum, 89° Fug. 13, 1955; minimum, 48° Fbb. 15, 1955.

Nater temperatures of Specific conductance of daily samples available in district office at Ocala, Fla. Values reported for dissolved solids are residues on evaporation at 180°C. Records of distrarge for water year October 1954 to September 1955 were computed from stage-discharge relation based on stage record for Lake Poinsett near Cocoa, Fla., and are available in Surface Water district office at Ocala, Fla.

Chomical analyses

		Color	100	100	120	120	120	100	130	100	100	100	100	100	06	80	75	8	80	8
		Нd	6.6	6.9	6.7	6.8	6.7	8.9	6.7	6.8	6.9	6.7	2.0	6.9	6.7	7.0	7.1	6.7	0.2	6.9
	Specific conduct-	ance (micro- mhos at 25°C)	286	261	201	200	173	189	204	199	210	222	225	258	317	314	323	335	318	313
	ness CO ₃	Non- carbon- ate	37	34	25	24	20	22	30	24	22	33	58	36	52	40	40	43	40	38
	Hardness as CaCO,	Calcium, mag- nesium	9	55	46	46	40	43	47	44	46	20	48	26	89	63	63	89	65	S
	Dissolved solids	(residue on evap- oration at 180°C)	211	192	154	154	130	140	165	154	147	164	161	187	250	204	216	241	213	208
r 1955		Nitrate (NO ₃)	0,1	۲.	-	Ξ.	٥.	٠.	<u>ه</u> .	۲.	es.	Ξ.	-:	-:	-:	63	٦.	۲.	<u>د</u> .	۲.
Septembe	i	Fluoride (F)	0.1		0.	0.	0.	0.	.1	٦.	0.	1.	Ξ.	0.	-	۲.	-:	Τ.	7.	-:
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride (C1)	62	28	41	4	35	40	47	44	46	51	51	61	82	72	74	72	10	69
er year Oct		Sulfate (SO ₄)	12	12	8.3	8.2	6.5	7.2	7.5	8.9	8.0	7.8	8.2	9.0	12	12	14	13	11	==
Illion, wate	Bicar-	bonate (HCO ₃)	58	26	36	27	22	26	21	24	23	21	24	7 2	20	27	28	30	30	82
irts per m	Dotas	sium (K)	0.5	.5	4.	4.	7.	.2	4.	4.	4.	2.		s.	1	80	∞.	∞.	9.	Ε.
yses, in pa		Sodium (Na)	31	28	21	21	18	20	21	20	22	21	23	26	30	34	36	35	33	32
nical anal	Mag-	nesium (Mg)	5.6	4.3	3.9	3.3	3.1	3.8	3.5	3.4	3.8	4.3	3.9	5.1	5.7	4.9	5.1	5.5	4.9	6.4
Chei	-[6]	clum (Ca)	15	12	12	13	Ξ	Ξ	13	12	12	13	13	14	18	17	17	18	18	17
		Fe)	0.19	.12	Ξ.	. 12	Ξ.	. 12	. 29	.13	.13	. 28	8	. 22	84	60.	.07	8	.07	80.
	ı	Silica (SiO ₂)	6.2	5.2	5.4	4.4	3.4	3.2	15	13	3.7	3.4	1.8	1.7	3.6	4.0	==	7.8	7.2	8.6
	Мера	discharge (cfs)	2,134	2,941	2,399	1,952	1,970	1,863	1,590	1,410	1,213	1,057	882	852	788	159	748	609	455	343
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-20	Feb. 21-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

75 80 70 80 65	50 50 55 140 140 160	190 180 150 150	106
7.0		6.9 7.7.7 1.7.1	6.9
326 386 423 446 488 531	586 603 584 497 478 367 276	240 267 248 274 274	328
44 50 59 62 67	72 75 70 70 85 83	25 30 30 31	42
98 8 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	103 108 106 94 95 77	56 60 63 63	67
219 263 288 296 319 349	413 436 418 348 309 249 201	182 201 182 199 182	232
ယ <u>် နှံ့ နှံ့ စာ စာ ကု</u>	कं कं कं कं कं कं	कं कं कं छं छं	0.3
			0.1
73 87 94 103 113	139 143 136 109 100 77	48 54 54 50	73
112 115 117 20 20	22 23 33 34 34 34 34 34 34 34	10 12 13 13	15
333333	332433333333333333333333333333333333333	37 36 38 38	8
1.0.8.1.5	6 4 4 2 6 2 H	တွင်္တလုံ တုံ နှံ	0.7
33 44 49 56 61	68 68 68 68 68 84 86 52	22 25 25 28 26	32
	0.0.0.7.0.7.4. 0.0.4.7.0.0.5.		5.5
25 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	26 27 25 25 18	16 17 16 17 16	18
999999	.01 .01 .10 .10 .10 .13	200 110 110 110 110 110 110 110 110 110	0.12
E. E. 4. 5. 4. 5. F. O. F. 8 ± 4	24.24.0.0.0 50.00.004.0	7.7.0 0.0 8.8 8.8	5.6
308 260 228 196 179 166	145 130 180 380 710 925 1,112	1, 160 1, 354 1, 479 1, 758 2, 091	1,022
Apr. 1-10, 1955 Apr. 11-20 Apr. 21-30 May 1-20 May 11-20 May 21-31	June 1-10. June 11-20. June 11-30. July 1-10. July 11-30. July 21-31. Aug. 1-10.	Aug. 11-20 Aug. 21-31 Sept. 1-10 Sept. 11-20 Sept. 21-30	Average

ST. JOHNS RIVER BASIN -- Continued

ST. JOHNS RIVER NEAR COCOA, FLA. -- Continued

Temperature (°F), of water, water year October 1954 to September 1955

			emperatu.	10 (x),	JI WALEL,	water yeu	T OCTOBE	1001 10	ocpte moe	1000		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	66	68	68	58	70	62	74	84	86	85	87
2	67	67	68	68	61	70	66	76	81	86	85	86
3	65	59	65	68	62	74	66	76	78	87	84	86
4	66	64	63	66	64	70	65	76	78	85	86	86
5	65	66	63	66	64	76	70		78	85	86	87
ر "		1) "	٠.))	1	1		
6	66	64	65	66	63	76	71	78	82	86	85	87
7	67	63	60	66	67	75	71	78	81	85	85	87
8	65	63	69	65	69	64	73	80	83	86	85	85
9	67	65	61	65	64	69	72	78	78	87	85	84
10	67	65	62	66	65	62	72	82	79	83	86	85
		1	1	1	1	1		-		\		
11		68	59	68	69	67	74	84	80	8.*	86	83
12	66	69	61	63	55	70	73		80	86	87	87
13	66	70	63	66	50	74	75	84	80	83	89	87
14	68	71	62	57	54	74	74	82	82	86	84	87
15	70	71	58	57	48	76	74	80	85	87	86	86
		ì	ì	Ī	Ì			1		İ		
16	66	72	55	59	59	77	74	80	85	87	86	86
17	68	74	58	63	60	78	75	80	80	8.3	84	86
18	68	73	60	63	60	78	75	77	80	83	87	84
19	68	72	58	63	63	78	75	78	80	83	87	85
20	70	71	53	59	63	74	75	78	81	83	86	84
			1	1			, -					
21	69	67	51	60	65	76	75	78	84	83	88	82
22	69	67	51	62	66	76	76	78	83	87		84
23	70	69	53	64	66	67	76	80	84	83	86	84
24	71	66	55	64	66	69	78	78	85	81	87	85
25	71	66	65	57	65	68	78	84	84	81	86	85
		1	1	1								
26	72	64	57	56	66	70	78	84	85	82	86	84
27	73	63	60	58	66	64	74	84	86	83	86	84
28	74	65	60	57	68	59	75	82	84	84	86	86
29	74	72	62	58		54	75	82	86	84	86	86
30	71	66	64	55		57	75	84	78	86	86	86
31	69		67	55		59		80		85	86	
Aver-	68	C.										
	99	67	60	62	62	70	73	80	82	85	86	85
age				L	L	l	L	L	L	L		L

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR CHRISTMAS, FLA.

LOCATION.--At gaging station, 15 feet downstream from bridge on State Highway 50, 2 miles upstream from Lake Cone and Tosohatchee Creek, and 4.5 miles east of Christmas, Order Courty.

DRAINGAR AREA.--1,418 square miles Courty.

RECORDS AVAILABLE.--Chemical analyses: October 1954 to August 1955.

RECORDS AVAILABLE.--Chemical analyses: October 1954 to August 1955.

REMARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1984.

		ä	٥					ю		2		
		Color			_	_				_		
		Hd	6.8	6.9	6.7	7.1	7, 1	6.8	6.7	6.7	6.9	6.8
	Specific conduct-	ance (micro- mhos at 25°C)	458	274	388	662	459	559	551	734	651	280
	ness CO ₃	Non- carbon- ate	57	31	48	83	26	72	16	92	80	89
	Hardness as CaCO ₃	Calcium, mag- nesium	74	23	65	102	84	86	106	120	114	96
	Discolved	solids (sum)	224	144	180	341	235	27.1	288	373	324	588
		(NO ₃)	0.0	7.	~	2.	٥.	1.1	რ.	٥.	Τ.	0
ıgust 1955		Fluoride (F)										
1954 to A		Chlor ide (C1)	110	64	92	169	109	131	137	180	148	136
Chemical analyses, in parts per million, October 1954 to August 1955	;	Sulfate (SO ₄)	21	12	17	35	21	22	22	38	37	35
s per millic	Bicar-	bonate (HCO ₃)	21	26	21	24	34	32	36	35	40	34
s, in part	Potas-	sium (K)										
cal analyse	:	(Na)	55	33	46	88	55	64	67	93	77	74
Chemi	Mag-	nesium (Mg)	7.7	4.1	6.7	==	7.7	6.6	9.6	=======================================	10	9.4
	Cal-	cium (Ca)	17	14	15	23	21	23	3 6	30	53	23
		(Fe)	90.0	91.	.05	66	10.	.03	40.	5	Ξ.	60
	ŝ	(SiO ₂)	3.2	4, 1	1.7	1.0	4.0	6.	3.3	4.1	2.6	4.3
	Mean	discharge (cfs)	2,020	2,020	1,420	934	222	277	202	144	692	1.210
		Date of collection	Oct. 2, 1954	Nov. 8	Dec. 23	Jan. 31, 1955	Mar. 14	Apr. 26	May 11	June 6	July 18	Aug. 29

ST. JOHNS RIVER BASIN--Continued

ECONLOCKHATCHEE RIVER NEAR CHULUOTA, FLA.

LOCATION --At gaging station, 10 feet downstream from highway bridge, 2.6 miles northeast of Chuluota, Seminole County, and 10 miles upstream from mouth. DRAINAGE AREA.--260 square miles, approximately. RECORDS ANAILABLE.--Chemical analyses: November 1954 to August 1955. RECORDS --74-Hos reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

Chemical analyses, in parts per million. October 1954 to August 1955

					Chemic	cal analyses	s, in parts	per millio	n, October	Chemical analyses, in parts per million, October 1954 to August 1955	gust 1955							
	Mean			Cal-	Mag-		Potas-	Bicar-	;		:		Dissolved	Hardness as CaCO,	ess CO,	Specific conduct-		
Date of collection	discharge (cfs)	(SiO ₂)	(Fe)	cium (Ca)	nesium (Mg)	(Na)	stum (K)	bonate (HCO _s)	Solitate (SO ₄)	Chloride F (C1)	r luor ide (F)	(NO ₅)	solids (sum)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	рН	Color
Nov. 8, 1954	47	6.9	0.30	21	8.2	61		48	28	104		4.8	258	98	47	477	7.0	140
Dec. 20	105	12	. 24	15	5.5	29		28	16	28		5,8	154	8	37	295	9.9	180
Jan. 31, 1955	102	6.0	.21	15	4.8	30		88	14	28		3.6	145	57	34	292	8.8	140
Mar. 14	33	8.5	Ξ.	78	=	73		69	34	127		9.0	322	115	4	620	7.0	80
Apr. 26		6.3	.00	30	13	83		78	38	141		8.3	358	128	64	202	7.1	65
June 6		5.6	8.	30	11	85		79	41	139		1,7	352	120	26	677	7.0	06
July 18	137	6.9	£3.	13	3,3	24		28	16	40		1.4	119	46	23	228	6.5	340
Aug. 29		6.1	. 19	==	1.8	14		23	01	92		œ.	81	35	16	155	6.5	270
	The state of the s	-						-				1						

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER ABOVE LAKE HARNEY, NEAR GENEVA, FLA.

LOCATION.--At gaging station at bridge on State Highway 46, 1 mile upstream from Lake Harney, 5½ miles southeast of Geneva, Seminole County, and 16.9 miles southeast of Sanford.
Mides Southeast of Sanford.
DRAINGAREA.--1,910 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1955.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1955 are given in WSP 1384.

Chemical analyses, in parts per million, November 1954 to August 1955

	ħ.	_		_			_	_	_
	Color	\vdash		_		65	_		_
	Hq	6.9	6.7	7.2	7.0	7.0	6.9	7.1	6.7
Specific conduct-	ance (micro- mhos at 25°C)	513	582	1,040	1,000	1, 330	2, 590	1, 310	902
ness CO ₃	Calcium, Non- mag-carbon- nesium ate	54	29	126	120	159	330	154	104
Hardness as CaCO ₃	Calcium, mag- nesium	1.1	88	120	150	192	369	194	132
Dissolved	solids (sum)	262	304	220	518	652	1, 410	687	466
	Nitrate (NO ₃)	0.2	4.	۳.	e.	1.4	1.	.5	٦.
	Fluor ide (F)								
	Chloride (C1)	128	139	278	254	325	680	318	222
	Sulfate (SO ₄)			28	53	70	199	96	26
Bicar	Bicar- bonate (HCO ₃)		27	29	36	40	48	48	34
Potas-	Potas- sium (K)			_					
	Sodium (Na)		70	120	135	172	385	181	123
Mag-	nesium (Mg)	7.8	9.2	17	17	23	43	21	14
Caj-	cium (Ca)	18	20	35	32	39	77	43	30
	Fe)	0.17	60.	Ξ.	80 .	9.	.02	60.	80.
	Silica (SiO ₂)	2.7	30	1.0	8.8	1.2	3.4	3.4	3.9
Мезп	Mean discharge (cfs)		1,670	1,080		309	142	870	1,380
-	Date of collection	Nov. 9, 1954	Dec. 20	Feb. 1, 1955	Mar. 15	Apr. 27	June 7	July 19	Aug. 31

INDIAN RIVER BASIN

ELLIS CANAL NEAR INDIAN RIVER CITY, FLA.

LOCATION --At gaging station in Delespine Grant, Brevard County, near center of span on downstream side of bridge, 1 mile upstream from Indian River, and RECORD ANAILABLE. --Chemical Ranges (1517).
RECORD ANAILABLE. --Chemical analyses: September 1954 to August 1955.
REMARKE. --Faluses reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

Color 55 55 45 45 52 22 60 82 80 1.7.6 Ħd 1,840 2,680 2,750 2,750 2,760 2,670 2,490 2,720 2,740 (micro-mhos at 25°C) conduct ance 419 356 416 440 308 436 500 468 carbon-Nonate Hardness as CaCO, mag-nesium Calcium, 410 650 690 665 626 578 628 642 Dissolved solids 1,510 1,400 1,580 1,590 1,540 1,540 1,510 1,600 1,580 (snm) Nitrate (NO₃) 23.66 1.5 8 1.6 Chemical analyses in parts per million, September 1954 to August 1955 Fluoride 3 Chloride 700 595 610 637 640 545 545 606 615 <u>ີ</u> 260 231 273 273 247 231 210 272 278 Sulfate (SO₄) bonate (HCO₃) 253 270 258 258 Bicar-126 260 236 233 241 Potasstum (K) 409 310 295 316 319 311 290 332 330 Sodium (Na) Mag-nesium (Mg) 56644 35 35 39 196 197 198 198 194 194 193 Cal-(Ca) . 32 2228 Fe) 8.08.4 2.08.4 Silica (SiO₂) 9 2 4 0 4 11.2 2.82 2.74 2.68 2.86 Mean discharge 1.97 1.68 2.78 2.30 (cts) July 19 of collection 27, 1954 Date

CLEAR LAKE NEAR COCOA, FLA.
shore of Clear Lake, 2% miles northwest of Cocoa, Breward Countv.

LOCATION.--At staff gage on southeast shore of Clear Lake, 2% miles northwest of Cocoa, Brevard County. RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1958. REPRINTES.--Yalues reported for dissolved solids are sums of determined constituents.

GEECF	IEE RIV	PR	T	0	PEA	RL	R	I.	VΕ
	Color	140	96	80	180	170	180	180	75
	Hd	6.8	6.3	6.4	6.5	6.2	6.2	6.3	6.3
Specific conduct-	ance (micro- mhos at 25°C)	646	352	229	297	320	327	352	544
ness .CO,	Non- carbon- ate	73	39	24	32	33	33	38	62
Hardı as Ca	Calcium, mag- nesium	8	51	36	42	45	43	47	92
	Dissolved solids (sum)	320	202	118	139	152	159	174	271
		0.2	۳.	1.3	7.	.1		٠.	۶.
:	Fluoride (F)								
:	(C1)	_				43	80	88	137
;	(80,)	22	32	9.0	9.0	9.0	12	15	24
Bicar-	bonate (HCO _s)	24	14	14	12	41	12	97	17
Potas-	sium (K)	15	=	6	9	0	5		23
	(Na)	8	u	-		_	4	_	_
Mag-	nesium (Mg)	11	6.3	3.8	5.2	5,5	4.9	5.4	8.8
Cal.	cium (Ca)	19	10	8.0	8.3	8.9	9.1	8.6	16
	(Fe)	0.22	. 12	8	. 21	.11	. 15	80.	80.
	(SiO ₂)	3.3	13	5.9	6.1	2.4	3.3	3.3	4.4
Mean	discharge (cfs)								
	Date of collection	Nov. 9, 1954	Dec. 14	Jan. 31, 1955	Mar. 18	Apr. 28	June 6	July 19	Sept. 2
	All Mag. Specific as CaCo, conduct-	Mean Silica Iron cium nesium (Na) (K) (HCQ ₂) (Fe) (Ca) (Mg) (Mg) (Mg) (K) (HCQ ₂) (HCQ ₂) (Ci) (Ci) (Ci) (Ci) (Ci) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg	Mean Silica Iron Cal- Mag- Sodium Potas Bicar Sulfate Cicls (SiQ ₃) Fe (Cal clum Cal clum Cal clum (Mg) (Mg	Mean (icis) Silica (icis) To 2 Cal (icis) Radio (icis) Solidar (icis) Bit (icis) Solidar (icis) Cal (icis) Cal (icis) Cal (icis) (ic	Mean (slc.) Fig. (2s) From (crts) Cal- (slc.) Mage (slc.) Botatum (km) Bit	Mean Silica Iron Clair mesium (Na) (Mg)	Mean (slot) Sultane (slot) (Slot) (Fe) (clum) Cal- (clum) Mage (slot) Botatum (kma) Bit (kma) </td <td>Mean (cfs) Silica (cfs) Fe) Cal. Rage (cfs) Soldium (cfs) Potase (cfs) Bicart (cfs) Sum (cfs) Potase (cfs) Sum (cfs) Potase (cfs) Chloride (cfs) Finoride (cfs) Num (cfs) Num (cfs) Num (cfs) Rage (cfs) Potase (cfs) Potase (cfs) Soldium (cfs) Potase (cfs) Potase (cfs) Soldium (cfs) Potase (cfs)<!--</td--><td>Mean (sci.) Sultant (sci.) From (cr.) Cal- (mar.) Mage (si.) Botation (sci.) Butar (sci.) Fig. (sci.)</td></td>	Mean (cfs) Silica (cfs) Fe) Cal. Rage (cfs) Soldium (cfs) Potase (cfs) Bicart (cfs) Sum (cfs) Potase (cfs) Sum (cfs) Potase (cfs) Chloride (cfs) Finoride (cfs) Num (cfs) Num (cfs) Num (cfs) Rage (cfs) Potase (cfs) Potase (cfs) Soldium (cfs) Potase (cfs) Potase (cfs) Soldium (cfs) Potase (cfs) </td <td>Mean (sci.) Sultant (sci.) From (cr.) Cal- (mar.) Mage (si.) Botation (sci.) Butar (sci.) Fig. (sci.)</td>	Mean (sci.) Sultant (sci.) From (cr.) Cal- (mar.) Mage (si.) Botation (sci.) Butar (sci.) Fig. (sci.)

INDIAN RIVER BASIN -- Continued

SURFACE WATER SLOUGH NEAR COCOA, FLA.

LOCATION.--At culvert on graded road, 2.0 miles north of city of Cocoa water plant and 2½ miles northwest of Cocoa, Brevard County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.

Chemical analyses, in parts per million, November 1954 to September 1955

							INI	11.6	M	K.
		Color	400	360	280	250	260	250	180	320
		pH	6.3	5.8	5.4	5.4	5, 3	5.4	0	5.7
	Specific conduct-	ance (micro- mhos at 25°C)	147	127	126	149	163	110	106	91.0
	co,	Non- carbon- ate	12	12	12	14	11	∞	00	£
	Hardness as CaCO,	Calcium, mag- nesium	22	19	15	81	17	13	9	8
	Dissolved	(uns)	89	61	09	73	74	25	46	44
3		(NO ₃)	0.2	.2	٥.	-:	~.	=:	e.	٥.
or range	:	Fluor ide (F)								
Cheffical analyses, in parts per minion, november 1901 to September 1905	:	Chloride Fit	32	30	32	40	40	24	21	17
NOVELLIDEL		Sulfate (SO ₄)	1.0	2.5	2,5	1.5	1.8	4.5	4.2	6, 5
or minion,	Binar	Bicar- bonate (HCO ₃)		8	4	2	2	9	60	9
ni barro h	Potas- sium (K)					_	_	14	_	.3
KINALYSCS,		Sodium (Na)		1	17	20	22	77	12	Ψ
CHEMICAL	Mag	nesium (Mg)	2.6	2.6	2.2	2.7	2.1	1.5	1.4	2.2
	-1-0	ctum (Ca)	4.6	3.3	2.4	2.8	3.3	2.8	1.1	3.5
		(Fe)	0.41	11	17	15	60.	. 12	6.	. 13
		Silica (SiO ₂)	5.6	3.5	1.4	2.8	1.1	3.9	3.5	3.5
	Moon	discharge (cfs)								
		Date of collection	Nov. 9, 1954	Dec. 14	Jan. 31, 1955	Mar. 18	Apr. 28	June 6	July 19	Sept. 2

CRANE CREEK AT MELBOURNE, FLA.

LOCATION.--At gaging station, 24 feet upstream from bridge on U. S. Highway 192, 1½ miles west of city hall in Melbourne, Brevard County, and 2½ miles upstream from Indian River.
DRAINGE AREA.--12.6 square miles analyses: November 1954 to September 1955.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1955.
REMARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955

Chemical analyses, in parts per million, November 1954 to August 1955

given in WSP 1384

									21.
	Color	100	99	45	45	:	45	22	22
	Hd	7.6	9.2	7.8	7.7	7.9	7.5	9.7	7.6
Specific conduct-	ance (micro- mhos at 25°C)	650	902	1,020	1, 300	1,210	1,250	1,150	1,210
ness CO,	Non- carbon- ate	80	120	136	208	162	190	132	162
Hardness as CaCO,	Calcium, mag- nesium	208	310	337	413	388	418	361	387
Dissolved	solids (sum)	355	493	559	200	637	670	636	199
	Nitrate (NO ₃)		1.2	9.	1.3	1.	6.	۳.	.2
:	Filloride (F)								·
	(C1)	112	151	182	250	214	230	205	226
Sulfate (SO ₄)		30	36	40	61	46	51	45	48
Bicar- bonate (HCO ₃)		156	233	246	251	276	278	279	274
Potas-	Potas- sium (K)		61	75	96	98	87	94	95
	(Na)		_						
Mag-	nesium (Mg)	ន	13	14	24	18	22	15	17
Cal-	cium (Ca)	29	201	112	126	126	126	120	127
	(Fe)	0.55	.0	80.	.02	. 16	8.	.02	70.
911120	(SiO ₂)	7.8	13	14	18	=======================================	13	20	13
Mean	discharge (cfs)	24	10	7.8	6.2	5.1	4.0	5.1	5.0
	Date of collection	Nov. 17, 1954	Dec. 14	Feb. 3, 1955	Mar. 16	Apr. 26	June 8	July 22	Sept. 1

INDIAN RIVER BASIN--Continued

NORTH CANAL NEAR VERO BEACH, FLA.

LOCATION.--At gaging station at bridge on U. S. Highway 1, 3.9 miles north of Vero Beach, Indian River County.
RECORDS AVAILEDE.--Chemical analyses: November 1954 to August 1955.
REWARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384. Chemical analyses in parts per million, November 1954 to August 1955.

JDOI .			-	114		ODI	•	,	••
	Color	120	2	42	20	45	22	90	120
	Нq	7.5	7.6	7.6	7.5	4.	7.4	7.5	7. 8
Specific conduct-	ance (micro- mhos at 25°C)	297	492	262	515	464	739	802	629
ness CO,	Calcium, Non- mag- carbon- nesium ate	92	42	54	44	41	64	88	78
Hard as Ca	Calcium, mag- nesium	204	168	184	165	153	220	258	208
Dissolved	solids (sum)					238			
	(NO ₃)	0.0		0.	Τ.	.2	1.	6.	.5
į	Fluoride (F)								
	(C1)	85	71	80	89	09	114	120	100
	(SO ₄)	47	28	34	26	18	22	20	46
Bicar-	bonate (HCO ₃)	156	153	160	148	137	189	208	158
Potas- sium (K)		3	0	4	36	29	2	87	1
,	Sodium (Na)		4,	4	es 	- 2	2	9	5
Mag-	nesium (Mg)	12	7.5	=	9.3	8.7	14	16	13
Cal-	cium (Ca)	62	22	26	51	47	65	7.7	62
	(Fe)	0.54	.13	8	.0	. 23	5	. 19	.34
	(SiO ₂)	9.3	14	15	2	7.6	21	21	15
Mean	discharge (cfs)	49	91	=	6	10	2	16	51
	Date of collection	Nov. 20, 1954	Jan. 1, 1955	Jan. 23	Mar. 8	Apr. 19	June 1	July 12	Aug. 26

MAIN CANAL AT VERO BEACH, FLA.

LOCATION.--At gaging station, 8 feet upstream from dam and 0.6 miles northwest of Vero Beach, Indian River County.
RECORDS AVAILEBE.--Chemical analyses: November 1954 to August 1955.
REMARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

00	EECH	EE RIVE	R	TC)]	PEA	RL	R	ΙV	ER
		Color	140	20	40	20	20	20	75	120
		Нф	7.6	7.7	7.7	7.6	7.4	7.5	7. 4	7.5
	Specific conduct-	ance (micro- mhos at 25°C)	462	860	957	932	778	982	730	889
	ness CO,	Non- carbon- ate	29	001	120	107	92	100	88	84
	Hardness as CaCO,	Calcium, Non- mag- carbon- nesium ate	158	286	309	298	254	286	230	508
	Dissolved	solids. (sum)	261	485	545	518	417	539	408	389
		(NO ₃)	0.1	.2	٣.	۳.	6.	8	9.	8.
ugust 1955	:	Fluoride (F)								
Chemical analyses, in parts per million, November 1954 to August 1955		Chloride (C1)	99	134	159	140	112	168	105	107
, Novemb		Sulfate (SO ₄)	35	54	65	28	49	52	48	28
per millio	Bicar-	bonate (HCO ₃)	121	227	231	234	198	227	198	152
s, in parts	Potas-	sium (K)	3	7	6	6	54	8	0	6
al analyse		Sodium (Na)	3	9	7	9	-2	*	9	2
Chemic	Mag-	nesium (Mg)	8.7	16	23	18	15	20	11	13
	Cal-	cium (Ca)	49	88	98	90	7.1	85	74	62
		Fe)	0.49	.0	5	80.	.17	10.	Ξ.	.25
		Silica (SiO ₂)	8.6	14	19	28	- 11	17	=	14
	Mean	discharge (cfs)	144	16	8.6	21	19	12	ន	89
		Date of collection	Nov. 20, 1954	Jan. 2, 1955	Jan. 23	Mar. 9	Apr. 19	June 1	July 14	Aug. 26

INDIAN RIVER BASIN--Continued

SOUTH CANAL NEAR VERO BEACH, FLA.

LOCATION: --At gaging station, 20 feet upstream from bridge on State Highway 605, 2.5 miles south of Vero Beach, Indian River County.
RECORDS AVAILABLE. --Chemical analyses: November 1954 to August 1955.
REMARKE. --Chemical analyses: November 1954 to August 1955 given in Wap 1869 for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in Wap 1884.

		Color	100	2	30	22	45	45	80	100
		Нq	7.6	7.6	7.5	7.7	7.7	7.3	.5	4.
	Specific conduct-	ance (micro- mhos at 25°C)	919	606	1, 100	870	818	1, 180	808	725
	ness CO,	Non- carbon- ate	14	112	152	112	92	148	98	98
	Hardness as CaCO,	Calcium, mag- nesium	206	292	340	290	258	303	247	198
		solids (sum)	344	208	615	499	448	640	448	396
1955		(NO ₃)	0.0	0.	-:	.1	4.	4.	æ,	₹.
to August	:	(C1) (F)								
Chemical analyses, in parts per million, November 1954 to August 1955		Cnioride (C1)	85	148	196	142	120	227	124	130
illion, Nove	:	Sulfate (SO ₄)	20	61	92	24	26	8	24	48
rts per m	Bicar-	bonate (HCO ₃)	161	220	229	218	202	190	196	138
lyses, in pa	Potas-	stum (K)	15	4.	4(88	62	8	22	 82
mical ana		Sodium (Na)	,		3			п	•	
Che	Mag-	nesium (Mg)	12	19	28	19	16	27	14	15
	Cal-	cium (Ca)	63	98	6	82	7.7	7.	92	22
		Fe)	0.36	. 10	. 05	90.	. 24	. 01	. 02	. 15
	Š	(SiO ₂)	01	12	18	21	16	17	15	=
	Mean	discharge (cfs)	89	40	40	29	27	45	46	51
		Date of collection	Nov. 20, 1954	Jan. 1, 1955	Jan. 23	Mar. 8	Apr. 19	June 1	July 14	Aug. 26

ST. LUCIE RIVER BASIN

NORTH FORK ST. LUCIE RIVER AT WHITE CITY, FLA.

Records of discharge for water year October 1954 to September 1955 LOCATION --At gaging station, 10 feet upstream from bridge on State Road 712 at White City, St. Lucie County, 1.7 miles downstream from confluence of Fivemile and Tenmile Creeks, and 4 miles south of Ft. Pierce.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1955.
REMARKS.--Halles reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 195
given in WSP 1384.

Chemical analyses, in parts per million, November 1954 to August 1955

	7,000			5	Mag		Dotag	Bicar			:		Dissolved	Hardness as CaCO ₃	ess 30,	Specific conduct-		
Date of collection	discharge (cfs)	Silica (SiO ₂)	(Fe)	cium (Ca)	nesium (Mg)	Sodium (Na)	stum (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	solids (sum)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	ьн	Color
Nov 20 1954	 ;	5.6	0.14		9.4	41		109	48	89		0, 1	269	146	57	479	7.5	80
Jan 2, 1955	:	15	0.0		19	86		157	44	154		-:	492	238	109	876	9.2	30
Ian 22	108	2 2	ā		29	114		201	104	220		9	672	336	172	1, 210	7.8	20
Mar. 10		12	.0	96	34	134		214	124	260		۳.	165	380	204	1, 410	7.7	20
Apr. 20	66.5	15	.05	91	36	111		206	112	202		٥.	661	334	165	1,200	8.	24
June 2	;	16	8	96	23	116		208	124	203		<u>.</u>	680	334	164	1, 220	7.5	40
July 13		5.8	. 16	25	5.3	19		64	24	34		۳.	146	84	32	280	6.9	100
Aug. 25	1.830	4.7	8	17	5.5	17		40	19	34		9.	118	65	32	236	.0	35

LOCATION --At gaging station, 10 feet downstream from bridge on Ideal Holding Co. Road, and 12 miles west of White City, St. Lucie County. RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1955. REMARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

DIVERSION CANAL NEAR WHITE CITY, FLA.

OGE	ECHE	RIVER	T)	PF	ARL	R	IV	E	R
		Color	120	8	45	20	36	8	200	140
		Hq	7.1	7.6	7.6	7.7	8.0	7.1	8.8	7.1
	Specific conduct-	ance (micro- mhos at 25°C)	283	826	1, 190	1,640	1,730	1,150	324	317
	ness CO ₃	Non- carbon- ate	32	94	135	202	212	168	37	æ
	Hardness as CaCO ₃	Calcium, mag- nesium	82	233	363	428	426	278	97	8
	Dissolved	solids (sum)	143	477	681	906	920	574	170	169
55		(NO ₃)	0,1	4.	<u>د</u>	1.4	۳.	~!	1.0	9.
ugust 19	:	F luoride (F)								
Chemical analyses, in parts per million, November 1954 to August 1955		(C1)	47	148	191	310	332	210	20	48
Novembe		(SO,	15	63	86	130	143	88	18	24
er million,	Bicar-	bonate (HCO ₃)	25	169	278	275	262	133	73	64
in parts p	Potas-	sium (K)	1	8	6	_	9		4	9
analyses,		(Na)	2	00	10	171	18	01	~	61
Chemica	Mag-	nesium (Mg)	9.0	16	24	88	37	25	8.4	6.1
	Cal-	cium (Ca)	ខ្ល	67	106	109	110	2	S	26
	į	(Fe)	0.17	.15	8	5	.0	.05	.27	80.
	90100	(SiO ₂)	6.6	16	16	12	13	14	7.8	5.2
	Mean	discharge (cfs)	;	;	5.82	5.63	5, 53	16.6	;	162
given in mor toor.		Date of collection	Nov. 20, 1954	Jan. 2, 1955	Jan. 22	Mar. 10	Apr. 20	June 2	July 13	Aug. 26

90 110 440

6.8

439 219 179

2002

6.7.6

347 298 123 336

LAKE OKEECHOBEE AND THE EVERGLADES

HARNEY POND CANAL AT FLORIDA HIGHWAY 78, NEAR MOORE HAVEN, FLA.

No discharge records available for this station.

carbon-Nonate 29 12 21 Hardness as CaCO, Calcium, mag-nesium 158 72 61 Dissolved solids (mns) 2882 235 124 165 Nitrate 000 (NO) Chemical analyses, in parts per million, November 1954 to July 1955 Fluoride E Chloride (Cl) 38 34 17 28 48 25 18 Sulfate (SO₄) 16 9.8 11 28 18 18 18 Bicar-bonate (HCO₃) 13 24 15 157 73 49 Potas-stum (K) 25 16 7.3 128 Sodium (Na) Mag-nesium (Mg) 5.6 2.3 43 36 9.6 40.6 Cal-ctum (Ca) 52 25 21 0.68 .59 .20 Iron (Fe) 13 Silica (SiO₂) 9.6 Mean discharge (cfs) 15 27, 1955 Apr. 26..... July 18 Nov. 10, 1954..... Date of collection

Mar. 8 Jan.

Color

펎

Specific conduct ance

(micro-mhos at 25°C)

INDIAN PRAIRIE CANAL AT FLORIDA HIGHWAY 78, NEAR OKEECHOBEE, FLA.

No discharge records available for this station, LOCATION --At bridge on Florida Highway 78, approximately 16 miles southwest of Okeechobee, Okeechobee County. RECORDS AVAILEMELE. --Chemical manayses: November 1994 to August 1995. REVARKES. --Values reported for dissolved solids are sums of determined constituents. No discharge records avai

		or	0		0	0	0	0	0	0
		Color	_		_		110			
		Нф	7.3	6.5	6.3	7.0	7.0	6.4	6.0	6.5
	Specific conduct-	ance (micro- mhos at 25°C)	227	284	237	219	195	221	235	266
	ness aco,	Non- carbon- ate	49	103	77	20	19	64	7.5	42
	Hardness as CaCO,	Calcium, mag- nestum	88	114	06	8	99	84	91	110
	Dissolved	solids (sum)	132	175	134	126	103	122	125	808
5		(NO ₃)	1.4	1.0	1.9	1.1	φ.	6.	٥.	۰.
gust 195	: i	Fluoride (F)								
Chemical analyses, in parts per million, November 1954 to August 1955	:	Chioride (C1)	91	15	15	16	16	15	9.2	14
November	•	Sulfate (SO ₄)	42	96	99	42	18	21	62	7.1
er million,	Bicar-	bonate (HCO ₃)	48	14	16	40	57	28	20	38
in parts p	Potas-	Sium (K)	9	6	4	80		0	4	8
analyses,		(Na)	æ	86	9	7.8	10	5.0		9.
Chemical	Жае-	nesium (Mg)	4.4	6.5	6.1	9.6	3.9	6.0	5.8	7.9
	Cal-	cium (Ca)				24	20	22	27	<u>ۃ</u>
	ٳ	(Fe)	0.55	. 46	. 26	. 20	.40	.41	1.7	1.4
	Ğ	(SiO ₂)	7.4	4.9	4.0	9.8	5.5	4. w	7.2	의 -
	Mean	discharge (cfs)								
		Date of collection	Nov. 10, 1954	Dec. 15	Jan. 27, 1955	Mar. 8	Apr. 26	June 1	July 18	Aug. 29

ISTOKPOGA CANAL NEAR CORNWELL, FLA

LOCATION. --At gaging station at bridge on U. S. Highway 98, 100 feet downstream from Seaboard Air Line Railroad bridge, 1‡ miles upstream from Kissimmee River, and 4‡ miles northwest of Cornwell Post Office, Highlands County.

RECORDS AVAILABLE. --Chemical analyses: November 1954 to August 1955.

RECORDS AVAILABLE. --Chemical analyses: November 1954 to August 1955.

REMARKS. --Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

	Color	L.	110			65			
	Hq.	6.7	6.4	6.3	9.9	6.4	6.1	6.2	6.1
Specific conduct-	ance (micro- mhos at 25°C)	71.0	67.4	112	77.0	105	96.5	96.3	98.4
ness CO ₃	Non- carbon- ate	8	12	32	12	20	15	16	9
Hardness as CaCO ₃	Calcium, mag- nesium	16	20	43	20	31	25	27	16
Dissolved	solids (sum)	33	45	22	42	51	48	43	32
	(NO ₃)	0.1	٦.	9.	ల	9.	4.	٥.	٥.
i i	Fluoride (F)								
Mag-	Chloride (C1)	9.0	9.2	01	01	14	12	10	7.5
	Sulfate (SO ₄)	6.5	9.5	20	10	12	12	12	6.0
Bicar-	bonate (HCO ₃)	2	21	13	22	13	12	13	12
Potas-	slum (K)	5	3	3	6.0	8	9	80	0
	Sodium (Na)	5.	.5	- i	•oʻ	ιci	9	4	Ġ
Mag	neslum (Mg)	1,3	2.1	5.4	1.7	3.8	2,3	2.6	۲.
<u>-</u>	cium (Ca)	4.2	4.6	8.4	5.2	6.1	6.3	6.5	5.2
	Fe)	0.23	91.	91.	01.	8	.05	. 19	5
	Silica (SiO ₂)	1.4	9.0	2.2	4.1	2.7	2.4	1.0	1.3
Mean	discharge (cfs)	639	355	296	262	97	15	~	
	Date of collection	Nov. 10, 1954	Dec. 14	Jan. 26, 1955	Mar. 7	Apr. 22	May 31	July 18	Aug. 29

KISSIMMEE RIVER NEAR OKEECHOBEE, FLA.

LOCATION (revised). -- At gaging station at bridge on State Highway 70 bridge, 9.4 miles west of Okeechobee, Okeechobee County, and 16 miles upstream from

March 1940 to February 1941, October 1953 to September 1955, DRAINGE AREA .-2,886 square miles. RECONDS AVALABLE.-Chemical analyses: March 1940 to F Water Temperatures: October 1953 to September 1955.

EXTREMES, 1984-55.—15. Solidors 1200. Corporate 1200.

EXTREMES, 1984-55.—15. Solidors Maximum, 115 ppm June 21-30; minimum, 54 ppm May 21-31.

Hardness: Maximum, 39 ppm June 21-30; minimum, 19 ppm Oct. 1-10.

Specific conductance: Maximum, 19 ppm June 24, minimum 65° F Dec. 22.

EXTREMES, 1984-61. 1983-55.—15. Solidor Solidor Maximum, 115 ppm June 21-30, 1955; minimum, 51 ppm Oct. 21-31, 1953.

Hardness: Maximum, 39 ppm June 21-30, 1955; minimum, 12 ppm Oct. 11-20, 1955; minimum, 51 ppm Oct. 18, 1953.

Hardness: Maximum, 39 ppm June 21-30, 1955; minimum, 12 ppm Oct. 18, 1953.

Specific conductance: Maximum, 89° FM Mg. 22-24, 1955; minimum, 57° FD Dec. 22, 1954.

Water temperatures, (1953-55): Maximum, 89° FM Mg. 22-24, 1955; minimum, 80° FM Mg. 22-24, 1954.

Hardness: Maximum, 89° FM Mg. 22-24, 1955; minimum, 120° FD Dec. 22, 1954.

Hardness: Maximum, 89° FM Mg. 22-24, 1955; minimum, 80° FM Mg. 22-24, 1955; mi

		Color	100	100	06	100	100	100	90	90	90	90	8	06	75	75	10	22	65	8
		рĦ	6.5						6.3	6.4	6.3	6.6	9.9	9.9		8.8				
	Specific conduct-	ance (micro- mhos at 25°C)	67.2	6.9	72. 2	75.5	72.5	11.0	74.4	77.9	90.1	89.1	84.4	83.9	87.0	83.6	80.6	84.6	87, 5	92.2
	ess CO _s	Non- carbon- ate	9	œ	80	∞	6	10	B	10	14	12	12	œ	11	=	10	10	11	=
	Hardness as CaCO _s	Calcium, mag- nesium	19	19	22	21	20	20	19	21	24	22	22	8	22	22	22	23	22	- 5e
	Dissolved solids	(residue on evap- oration at 180°C)	29	61	25	99	89	9	83	63	42	92	83	89	73	ដ	8	19	81	99
ber 1955		Nitrate (NO ₃)	0.1	- :	-:	e,	2.	-:	e.		ઌ	۳.	87.	.5	e.	4.	₹.	œ.	9.	œ. —
to Septem	:	Fluoride (F)	0.1	0.	Ψ.	0.	٥.	Τ.	-	-	1.	1.	, -	7.	۳.	۲.	.1	-:	٦.	-:
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride (C1)	9.2	9.8	10	11	11	=	12	12	17	15	16	15	16	14	13	12	12	14
er year Oc		Sulfate (SO ₄)	5.0	4.2	5.8	6.0	10	5.5			6.2				6.2	6.8	6.0	7.0	7.5	6.5
illion, wat	Bicor.	bonate (HCO ₃)	16	14	15	16	14	12	57	7.	12	16	13	41	14	14	15	16	97	18
arts per n	Dotas-	Sium (K)	0.2	~!	27	4.	9.	ıc.	4	9	7	9.	2.	1.0	1.0	۲-	9.	4.	s.	۰,
dyses, in p		Sodium (Na)				6.5			4.9	6.5	6.4	6.6	6.2		7.1	9.9	9.9	6.4	6.4	6.5
emical ans	Mag	nesium (Mg)	1.9	2.1	2.2	2.2	2.2	2.2	6	23.0	2.6	2.6	2.2	1.8		2.2		2.1	2. 2	2.4
Ü	7	cium (Ca)	4.4	4.2	4.4	4.8	4.4	4.2	4	4.6	5.2	5.6	5.4	5.0		5.4			5.4	6.3
		Iron (Fe)	0.12	91.	. 11	.17	.11	.11	g	60	. 19	14	.17	.12	60.	.10	. 10	<u>ş</u>	9	90.
	1	Silica (SiO ₂)	5.6	5.8	14	13	9.0	7.9	2.2	2 2	4.	3.4	9.0	2.1	3.7	5.1	8.4	2.5	1.9	3.3
	Moor	discharge (cfs)	2,776	2,827	2,286	1,989	1.947	1,914	1 752	1.610	1,498	1,385	1,257	1,363	1,343	1,193	1,146	1,059	920	808
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-20	Feb. 21-28	Mar. 1-10	Mar. 11-20	Mar. 21-31

KISSIMMEE RIVER NEAR OKEECHOBEE, FLA. -- Continued

H 4	TLAN	TIC SLO	PE A	INL	·	A	STE	SKN	G	UL	r)r	M.E.A	.10	U	В	AD	IN	۵, ا
		Color	75	9	20	20	22	20	20	8	160	120	180	120	110	110	360	240	102
		Hd	6.6	6.3	6.3		5.3		8.9		4 6	9.9	9	6.7		6.4	6.4	6.5	6.5
	Specific conduct-	ance (micro- mhos at 25°C)	97.5	102	100	25	104	108	132	149	113	106	97.8	92.1	102	93.8	105	94.1	92. 9
	ness CO,	Non- carbon- ate	13	4	12	2 9	12	12	10	٠,	21	*	12	91	14	11	11	80	11
	Hardness as CaCO,	Calcium, mag- nesium	26	28	စ္က	5 5	2	30	37	8	3.5	200	58	26	58	27	34	27	26
inued	Dissolved solids	(residue on evap- oration at 180°C)	8 <i>L</i>	73	56	99	54	06	106	115	6 6	87	84	81	82	08	108	96	76
955Cont	;	(NO ₃)	0.8	9.	0.	- '	۲.	2.	6.		†. 4	'n	6	4.	9.	9.	9.	4.	0.5
tember 18	i	Fluoride (F)	0.1	-:	-: -	-: •	Ξ.	Τ.	۳.	Ξ.	:-	: -:	-	1.	۳.	Ξ.	۳.		0.1
Chemical analyses, in parts per million, water year October 1954 to September 1955Continued	:	(C1)	14 16	16	15	4.	I.5	15	17	18	9 15	12	12	12	14	12	12	13	14
ar October		Sulfate (SO ₄)	7.5	6.0	7.2	6.2	6.2	8.8		12		80	0.6	8.2	10	8.5	8.2	6.2	7.3
ı, water ye	Bicar-	bonate (HCO ₃)	17 16	17	18	202	71	22	32	66 6	3 2	18	20	50	19	19	28	23	18
per millior	Potas-	sium (K)	0.8	9.	9.	۰.	٠.	∞.	1.3	8 .	r		6.	9.	4.	ıc.	1.6	8.	8.0
, in parts		Sodium (Na)	6.9	6.7	6.9	2.5	4.	9.3	11	12	- 00	9.	9	6.9	7.5	7.0	6.8	7.2	1.0
l analyses	Mag-	nesium (Mg)	3.0							es e	, o	6		2.5					2.5
hemica	Cal-	cium (Ca)	6.3	7.2	7.5	7.2	4.7	7.6	9.1	요 :		7.2	7.2	6.3	7.4	6.3	8.9	7.2	6.2
J	٠	(Fe)	0.05	80	96	8 8	3	8	2.	= 2	17.	80	8	. 16	8	. 12	. 39	. 29	0.12
		(SiO ₂)	2.8	2.8	S. 7		2.5	8.3	4.3	4.	. 4	6.4	9	7.2	4.8	4.3	7.0	6.4	5.0
	Mean	discharge (cfs)	830	671	593	469	421	357	383	671	986	974	1, 296	1,260	820	936	1, 207	1,230	1,232
		Date of collection	Apr. 1-10, 1955	Apr. 21-30	May 1-10	May 11-20	May 21-31	June 1-10	June 11-20	June 21-30	July 11-20	July 21-31	Aug. 1-10	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average

LAKE OKEECHOBEE AND THE EVERGLADES

LAKE OKEECHOBEE AND THE EVERGLADES--Continued KISSIMMEE RIVER NEAR OKEECHOBEE, FLA.--Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	68	63	69	58	72	66	77	83	83	87	87
2	79	69	67	70	61	73	68	76	83	82	83	86
3	80	67	65	70	63	75	67	76	82	83	85	85
4	81	66	64	69	63	76	71	74	82	80	84	85
5	80	67	63	69	60	75	72	77	82	82	85	86
							l	l i				
6	80	68	62	68	64	76	74	77	83	83	86	87
7	79	67	61	67	68	76	75	78	82	83	86	85
8	80	65	60	67	68	73	76	80	83	83	85	83
9	77	65	61	65	65	70	75	79	82	85	85	87
10	77	66	61	67	67	72	75	81	83	85	85	84
						1						
11	78	68	60	67	68	73	76	82	83	85	85	85
12	79	68	61	67	62	74	77	80	79	85	87	86
13	80	69	63	62	58	76	78	82	80		86	86
14	79	69	63	61	58	72	78	83	80	85	86	85
15	79	71	62	60	59	72	78	81	86	86	87	87
						1						
16	76	73	61	62	62	76	79	82	79	80	87	85
17	69	73	62	65	63	78	80	80	78	85	88	85
18	71	73	62	67	66	77	78	80	79	85	87	85
19	71	73	60	64	66	78	77	80	80	86	87	85
20	72	68	56	63	66	77	78	82	80	85	87	85
20					_							
21	71	68	56	65	66	78	77	83	82	85	87	85
22	70	67	55	64	68	76	78	82	80	84	89	83
23	70	68	57	66	67	76	77	83	82	84	89	82
24	71	67	58	63	69	73	80	84	85	85	89	82
25	71	65	57	60	70	74	80	82	85	84	87	83
	ì	ł	}	1 .		l						-
26	72	64	59	60	70	74	76	86	82	85	87	83
27	73	65	63	59	70	68	78	85	85	87	88	82
28	79	65	65	58	62	66	78	85	85	85	88	84
29	73	67	65	57	,	62	79	85	83	85	87	84
30	72	68	67	56		63	77	84	85	86	87	
31	70		69	57		65] ::	85		85	87	
Aver-												
age	75	68	62	64	65	73	76	81	82	84	87	85

LAKE OKEECHOBEE AND THE EVERGLADES -- Continued

ST. LUCIE CANAL AT LAKE OKEECHOBEE, FLA. (Formerly published as St. Lucie Canal at Port Mayaca, Fla.)

LOCATION.—At bridge on U. S. Highways 98 and 441, at outlet of Lake Okeechobee, three-quarters of a mile west of Port Mayaca, Martin County.
RECORNS AVAILABLE.—Chemical analyses: March 1940 to February 1942; November 1955.
EXTREMES, 1940-42.—Dissolved solids: Maximum, 277 ppm Rept. 21-30, 1940; minimum, 142 ppm Aug. 21-31, Nov. 1-7, 1941.
Hardness: Maximum, 165 ppm Sept. 21-30, 1940; minimum, 102 ppm Aug. 1-10, 1941.
Specific conductance: Maximum daily, 528 micrombos Sept. 21, 1940; minimum daily, 253 micrombos Aug. 26, 1941.
REMARKS.—Records of specific conductance of daily samples available in district office, Oscala, Fla. Values reported for dissolved solids are sums determined constituents. No records of discharge available for this station.

ğ

		Color	06	8	45	65	45	45	081	90
		Hd.	7.7	7.5	6.8	8.7			7.1	-
	Specific conduct-	ance (micro- mhos at 25°C)	-		_	343			_	_
	ess 30,	Non- carbon- ate	35	20	14	21	21	26	12	23
	Hardness as CaCO ₃	Calcium, mag - nesium	148	160	148	128	120	138	92	162
	Dissolved	solids (sum)	227	234	250	180	184	214	154	261
955		(NO ₃)	0.3	~	4.	۲.	۲.	e5.	.	₹.
ptember 1	i	Fluoride (F)								
Chemical analyses, in parts per million, November 1954 to September 1955		(C1)	45	54	38	32	58	34	82	48
, November		Sulfate (SO ₄)	82	26	26	22	22	26	16	3 8
er million,	Bicar-	bonate (HCO ₃)	138	134	a 162	123	120	137	86	170
in parts p	Potas-	sium (K)								
l analyses,	:	(Na)	27	24	31		20	23	18	S
Chemica	Mag-	nesium (Mg)	9.3	11	11	8.3	8.5	9.3	3.7	5.4
	Ę.	cium (Ca)	44	46	41	36	34	40	32	82
		(Fe)	0.13	.64	8	80.	90.	.0	. 28	. 02
		(SiO ₂)	5.2	6.2	23	9.2	11	14	6.3	8.8
	Mean	discharge (cfs)								
		Date of collection	Nov. 18, 1954	Dec. 28	Jan. 26, 1955	Mar. 9	Apr. 20	June 5	July 17	Sept. 3

LAKE OKEECHOBEE AND THE EVERGLADES -- Continued

ST. LUCIE CANAL AT LOCK NEAR STUART, FLA.

Color 5 6 4 5 28 40 65 55 7.7 7.6 Ħd LOCATION: --At gaging station, 6 miles southwest of Stuart, St. Lucie County.
RECORDS AVALLABLE. --Chemical analyses: November 1954 to August 1955.
REMARKS. --Values reported for dissolved solids are sums of determined constituents. Fragmentary records of discharge for water year October 1954 to
September 1955 given in WSP 1384. Specific conductance (micro-mhos at 25°C) 383 602 792 924 741 763 399 477 mag - carbon-nesium ate Calcium, Non-26 45 67 94 46 46 18 29 Hardness as CaCO, 146 209 248 272 257 238 147 172 Dissolved solids (sum) 410 432 225 267 202 337 435 488 Nitrate (NO₃) Chemical analyses, in parts per million, November 1954 to August 1955 Fluoride (F) Chloride (C1) 34 77 121 148 82 101 35 53 Sulfate (SO₄) 30 39 47 38 47 23 Bicar-bonate (HCO₃) 146 200 221 218 258 234 158 174 Potas-sium (K) 20 43 42 43 51 67 25 32 Sodium (Na) Mag-nesium 6.4 9.6 19 11 13 5.4 7.2 (Mg) Cal-cium (Ca) 8 2 2 8 8 2 8 85 74 50 . 8. 5. 5. 5. Fe) 8888 Silica (SiO₂) 1.2 10 11 13 15 14 9.4 8.1 Mean discharge (cfs) Apr. 24 June 3. July 14 Aug. 27 Nov. 20, 1954 Jan. 2, 1955 Jan. 23 Mar. 10 Date of collection

WEST PALM BEACH CANAL AT CANAL POINT, FLA

LOCATION.--At bridge on U. S. Highway 441, 200 feet downstream from gaging station in hurricane gate structure 5 at Lake Okeechobee, in Canal Point, Palm Beach County.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1955.

REMARKS. --Ralues reported for dissolved solids are sums of determined constituents unless otherwise noted. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

Chemical analyses, in parts per million, water year October 1954 to September 1955

	Color	380	2	80	9	70	22	40	ß	35
	Hd	7.6	7.7	7.4	8.1	7.7	8.0	7.7	7.7	7.4
Specific conduct-	ance (micro- mhos at 25°C)	1, 790	311	340	354	333	326	368	334	337
ness CO,	Non- carbon- ate	72	24	31	14	58	22	20	30	23
Hardness as CaCO ₃	Calcium, mag- ne sium	426	104	126	126	124	118	123	128	126
Dissolved	solids (sum)	a 1, 190	162	197	226	199	179	221	187	187
į	(NO ₃)	1,8	٦.	۳.	₹.	₹.	ī,	e.	e5.	٦.
:	Fluoride (F)	9.0								
:	Chloride (C1)	271	25	34	33	30	28	36	32	31
	Sulfate (SO ₄)	107	26	24	56	22	18	26	24	24
Bicar-	bonate (HCO ₃)	487	86	116	136	116	117	126	120	126
Potas-	Potas-Bicar-Sulfate sium bonate (SO ₄)			•	_	_		_	•	_
:	(Na)	222		<u> </u>	23	17	11	7	Ä	~,
Mag-	nesium (Mg)	46	8.3	8,8	10	9.5	8.1	8.7	8.7	8.8
Cal-	cium (Cạ)	98	28	36	34	34	34	32	37	36
	Fe)	0, 19	.07	80.	.07	80.	60.	1.0	70.	8.
	Silica (SiO ₂)	40	8, 9	18	53	59	12	22	6.9	4.1
Mean	discharge (cfs)	244	235	170	202	481	445	382	379	0
	Date of collection	Oct. 8, 1954	Nov. 18	Dec. 28	Jan. 26, 1955	Mar. 9	Apr. 20	June 5	July 16	Sept. 3

a Residue on evaporation at 180°C.

WEST PALM BEACH CANAL AT RANGELINE ROAD NEAR LOXAHATCHEE, FLA.

LOCATION.--At downstream side of State Highway 7 bridge, 5.3 miles east of Loxahatchee, Palm Beach County.
RECORDS AVAILABLE.--Chemical analyses; October 1953 to September 1955. To September 1955 to September 1

Color 888888 22828 Ħd Specific conduct-(micro-mhos at 25°C) ance 677 951 736 805 1,330 889 739 721 1, 100 1, 090 carbon-ate Non-32 23 24 30 8 51 34 34 Hardness as CaCO, Calcium, nesium mag-230 230 230 230 230 232 206 174 331 312 Dissolved solids (sum) 516 409 455 753 484 398 402 654 640 Nitrate (NO₃) Chemical analyses, in parts per million, water year October 1954 to September 1955 3.1.0 Fluoride 0.3 £ Chloride (C1) 103 107 128 248 Sulfate (SO₄) 28 32 32 45 34 34 37 85 85 Bicar-bonate (HCO₃) 246 202 342 338 Potas-stum (K) 2.1 172 172 173 91 83 83 113 Sodium (Na) 92 Mag-nesium (Mg) 22222 29228 Cal-cium (Ca) 45 61 55 59 76 0.15 .10 .18 .18 98858 Fe) Silica (SiO₂) 18 22 22 23 52222 Mean ; discharge (cfs) Apr. 21 June 5. Oct. 2, 1954 Nov. 19 Dec. 29 Jan. 2, 1955 Jan. 26 Sept. 4 Date of collection

a Residue on evaporation at 180°C.

HILLSBORO CANAL AT BELLE GLADE, FLA.

LOCATION.--At gaging station at bridge on State Highway 717 in Belle Glade, Palm Beach County, 2 miles southeast of Lake Okeechobee.
RECORNS AVAILEE.--November 1994 to September 1955.
REMARKS.--Values reported for dissolved solids are sums of determined constituents. Records of discharge for water year October 1954 to September 1955
given in WSP 1384.

Chemical analyses, in parts per million, November 1954 to September 1955

	Color	90	20	20	55	45	35	150	220
	Hd	\vdash	7.6			7.9			
Specific conduct-	ance (micro- mhos at 25°C)	409	437	651	389	455	387	1, 040	1,440
ness CO,	Non- carbon- ate	30	32	28	34	33	20	104	143
Hardness as CaCO,	Calcium, mag- nesium	149	157	205	147	169	136	366	494
Dissolved	solids (sum)	230	247	441	214	251	219	627	890
	(NO ₃)	0.4	9.	∞.	s.	1.1	S.	3.4	7.6
i	Filoride (F)								
	(C1)	39	43	74	36	40	35	106	152
	(SO ₂)	31	28	48	26	32	28	128	188
Bicar-	bonate (HCO ₃)	146	152	216	138	166	142	320	428
Potas-	Sium (K)		_		_		_		
	(Na)	2	73	٠	21	26	22	86	77
Mag-	nesium (Mg)	12	12	19	21	77	92	35	49
Cal-	cium (Ca)	40	43	21	39	48	38	68	117
	(Fe)	0.04	.01	.02	. 02	8	.02	5	90.
	(8iO ₂)	8.3	18	84	=	9.6	ន	25	39
Mean	discharge (cfs)	188	215	223	284	161	a 210	340	229
	Date of collection	Nov. 18, 1954	Dec. 28	Jan. 26, 1955	Mar. 9	Apr. 20	June 4	July 17	Sept. 3

a No point velocity observations; discharge estimated by comparison with records for North New River Canal at South Bay.

86238

83858

Color

LAKE OKEECHOBEE AND THE EVERGLADES -- Continued

HILLSBORO CANAL AT RANGELINE ROAD, NEAR DEERFIELD BEACH, FLA.

LOCATION.—At bridge on U. S. Highway 441, 4.4 miles upstream from gaging station and 6.3 miles northwest of Deerfield Beach, Broward County.

RECORDS AVAILABLE.—Chemical analyses: October 1853 to September 1955.

REMARKS.—Values reported for dissolved solids are sums of determined constituents, unless otherwise noted. Records of discharge for gaging station near Deerfield Beach for water year October 1854 to September 1955 given in WSP 1384. No appreciable inflow or outflow between gaging station and sampling point except during periods of heavy local rain.

펂 Specific conductmicromhos at ance 801 944 400 947 594 598 458 620 882 carbon-78 8 24 7 28 8 12 Non-22 11 8 8 ate Hardness as CaCO, mag-nesium Calcium, 141 232 157 205 306 222 237 388 270 Dissolved solids 1358 349 260 344 431 (uns) 439 521 804 532 Chemical analyses, in parts per million, water year October 1954 to September 1955 Nitrate Ş Ş Fluoride (F) Chloride (C1) 94 52 54 54 54 108 143 207 132 Sulfate (SO₄) 38 33 33 Bicar-bonate (HCO₃) 152 253 181 218 218 287 244 276 416 320 1.5 Potassíum (K) 36 35 51 52 53 88 88 Sodium (Na) 65 Mag-nestum (Mg) 119 17 35 8 24 2 8 24 20 83 24 8 58 98 80 Cal-Cium (Ca) 05 2882 Iron (Fe) Silica (SiO₂) 9.5 21 15 9.7 13 13 13 discharge (cfs) 1, 500 149 1 1 1 Mean Oct. 1, 1954 Nov. 18 Apr. 20 June 8 July 27 Date of collection

a Residue on evaporation at 180°C.

Sept. 7

NORTH NEW RIVER CANAL AT SOUTH BAY, FLA.

LOCATION: --At bridge on State Highway 80, 410 feet upstream from gaging station in South Bay, Palm Beach County, and 2.4 miles south of Lake Okeechobee.
RECORDS AVAILABLE. --Chemical analyses: October 1953 to September 1955.
REMARKS. --Values reported for dissolved solids are sums of determined constituents unless otherwise noted. Records of disscharge for water year October 1954 to September 1955 given in WSP 1384.

		Color	180	8	8	35	20	45	45	8 6	2
		Hd	7.9	7.7	7.5	7.7	7.7	0	7.5	 	
	Specific conduct-	ance (micro- mhos at 25°C)	777	436	402	338	396	461	411	48.8	
	ness ICO,	Non- carbon- ate	72	32	32	32	29	35	25	200	200
	Hardness as CaCO,	Calcium, mag- nesium	697	161	149	135	145	168	149	307	
	Dissolved	solids (sum)	a 521	249	230	189	212	254	232	469	
er 1955		(NO ₃)	1.3	ຕ.	s.	s.	۲.	∞.	ıc.	2, c	;
o Septemb	į	Fluoride (F)	0.1								
Chemical analyses, in parts per million, water year October 1954 to September 1955		(CI)	82	42	8	98	34	42	33	4.2	:
er year Oc	,	(SO,)	74	36	31	24	24	34	29	198	
illion, wat	Bicar-	bonate (HCO ₃)	241	157	143	126	142	162	152	242	3
ırts per m	Potas-	sium (K)	2.0								
yses, in pa	i	(Na)	19	30	25	17	21	78	24	65	3
mical anal	Mag-	nesium (Mg)	23	13	21	11	11	13	12	23	5
Che	Cal-	cium (Ca)	20	43	40	36	40	46	40	2 5	3
		Fe)	0.07	. 05	.02	.01	2.	8.	8.	8.8	5
	L	(SiO ₂)	17	7.6	51	8.3	=	8.6	18	33	3
	Mean	discharge (cfs)	346	438	459	503	474	376		290	3
		Date of collection	Oct. 8, 1954	Nov. 18	Dec. 28	Jan. 27, 1955	Mar. 9	Apr. 20	June 4	July 16	

a Residue on evaporation at 180°C.

NORTH NEW RIVER CANAL AT HOLLOWAY LATERAL, NEAR FORT LAUDERDALE, FLA

LOCATION, --About 50 feet above confluence with Holloway Lateral, 4 miles upstream from gaging station near Ft. Lauderdale and approximately 10 miles upstream

from Ft. Lauderdale, Broward County.

RECCROS. AVAILABLE.—Chemical analyses: July 1950 to June 1952, October 1953 to August 1955.

EXTREMES. 1956-52.—Chemical analyses: Maximum, 864 ppm Mar. 3-7, 1952, minimum, 269 ppm Mar. 6-10, 1951.

EXTREMES. 1950-52.—Chemical Maximum, 145 ppm Mar. 6-10, 1951.

Specific conductance: Maximum daily 1, 120, micromhos Mar. 6, 1952; minimum daily, 395 micromhos Apr. 22, 1952.

REMARKS.—Values reported for dissolved solids are sums of determined constituents, unless otherwise noted. No discharge records available for this station.

Chemical analyses in parts per million. October 1954 to August 1955

		Color	170	100	45	9	80	65	140	100
		Нq	7.4	7.5	7.5	7.5	7.5	8.2	7.5	7.6
	Specific conduct-	ance (micro- mhos at 25°C)	383	416	388	394	406	438	464	456
	ess CO,	Non- carbon- ate	18	16	10	7	18	18	22	-
	Hardness as CaCO,	Calcium, mag- nesium	154	170	158	161	159	162	182	176
	Dissolved	solids (sum)	a257	232	219	211	221	246	261	250
		(NO ₃)	1.3	1.2	1.0	1.3	0.	6,	1.2	80
0001	:	ide Fluoride F	0.2							
Cholinical analyses in parts per million, October 1904 to August 1900	:	Chloride Fi	30	35	32	32	40	42	40	40
CODE TOOL		Sulfate (SO ₄)	12	12	5.0	3.0	5.0	16	21	9.5
minion, o	Bicar	bonate (HCO ₃)	166	188	180	180	172	176	196	200
מל מו ומ	Potas-	sium (K)	0.7							
allery Seco at	:	(Na)	17	22	19)î	8	27	27	22
CHOILL AL	Mag-	nesium (Mg)	7.1	8.6	2.0	6.4	7.1	9.7	9.1	6.4
	Cal-	cium (Ca)		25				49	28	09
		(Fe)	0.14	60	.05	89.	. 19	8	.07	.07
		(SiO ₂)	8.8	5.9	13	9.5	12	14	8.0	9.7
	Mean	discharge (cfs)								
		Date of collection	Oct. 4, 1954	Nov. 1	Dec. 13	Jan. 17, 1955	Mar. 9	Apr. 18	July 27	Aug. 29

a Residue on evaporation at 180°C.

SOUTH NEW RIVER CANAL AT DAVIE, FLA.

No discharge records available for this station.

LOCATION.--At lock, 14 miles west of Davie, Broward County. RECORDS AVAILABLE.--Chemical analyses: October 1953 to August 1955. REMARKS.--Values reported for dissolved solids are sums of determined constituents unless otherwise noted.

Color 8888 8558 7.7.7.8.7.9.7.6 2.7.7.8 펁 Specific conductance (micromhos at 437 553 561 568 601 474 556 556 carpon-Non-8 2 2 2 3 34 35 18 Hardness as CaCO, Calcium, nesium mag-211 268 275 275 264 194 252 250 Dissolved solids (mns) a 316 318 330 327 330 272 320 315 Nitrate (NO₃) 1.5 1.3 Chemical analyses, in parts per million, October 1954 to August 1955 Fluor ide 0.1 Ξ Chloride <u>5</u> 33 23 33 48 28 31 33 Sulfate (SO,) 82 82 7 138 21 Bicar-bonate (HCO₃) 222 304 292 293 280 286 286 286 Potas-1.0 Stum (K) 19 19 19 2222 Sodium (Na) Mag-nesium (Mg) 9.4 12 Ctun (Ca) 73 95 89 86 89 87 Fe) 8.588 Silica (SiO₂) 13 6.0 18 12 8.4 11 Mean discharge (cfs) Apr. 18 June 13 July 27 4, 1954 Dec. 13 Jan. 17, 1955 J. Aug. 29..... Date of collection

a Residue on evaporation at 180°C.

MIAMI CANAL AT LAKE HARBOR, FLA.

No discharge records available for this station. LOCATION --At bridge on U. S. Highway 27, in Lake Harbor, Palm Beach County, a quarter of a mile south of hurricane gate structure 3 at Lake Okeechobee. RECORDS AVAILABLE.-Chemical analyses: October 1955 to September 1955. REMARKS.-Valueb. Te. October 1955 to September 1955 to September 1955 to September 1955 to September 1955 to September 1955 to September 1955 to September 1955.

		Color	20	8	73	20	20	180	45	8	20
		- Hg	┢			_	7.7		7.4	-	
	Specific conduct-	ance (micro- mhos at 25°C)	-				397		386		
	ess O,	Non- carbon- ate	29	14	32	37	32	18	28	100	36
	Hardness as CaCO,	Calcium, mag- nesium	230	102	143	160	149	343	138	380	170
	Dissolved	solids (sum)	a 389	128	214	232	223	486	218	547	230
er 1955		(NO ₃)	1.5	4.	4.	4.	₹.	3.2	4.	2.0	۲.
o Septembe		Filtor Ide (F)	0,1								
ober 1954 t	7.	(C1)	40	19	37	36	38	78	38	28	33
r year Oct		(SO ₄)	51	6.5	28	30	88	26	28	86	30
Chemical analyses, in parts per million, water year October 1954 to September 1955	Bicar-	bonate (HCO ₃)	208	108	135	150	143	324	134	342	164
arts per m	Potas-	stum (K)	1.0	3							
lyses, in p		(Na)	27	-6	23	21	22	47	25	52	19
mical ana	Мад-	nesium (Mg)	14	4.8	11	11	12	27	11	25	11
Che	Cal-	cium (Ca)	69	33	33	46	40	93	37	111	20
	1	(Fe)	0.27	. 24	e.	.02	90.	90.	8.	. 13	. 12
		(S10,)	8.3	1.8	22	14	15	14	13	13	6.1
	Mean	discharge (cfs)			_	_				_	
		Date of collection	Oct. 8, 1954	Nov. 18	Dec. 23	Jan. 27, 1955	Mar. 9	Apr. 20	June 4	July 16	Sept. 3

a Residue on evaporation at 180°C.

MIAMI CANAL AT WATER PLANT, HIALEAH, FLA.

LOCATION. --At 54th Street Bridge, half a mile downstream from gaging station, at water plant in Hialeah, Dade County.

EXERCINE NATILABLE. --Chemical analyses: March 1941 to February 1942, October 1955.

EXTREMES, 1941-42. --Dissolved solides Maximum, 228 ppm Feb. 20-28, 1942; minimum, 282 ppm Sept. 21-30, 1941.

Hardness: Maximum, 254 ppm Feb. 20-28, 1942; minimum, 207 ppm Sept. 21-30, 1941.

Specific conductance: Maximum daily, 506 micromhos July 1, 1941; minimum daily, 405 micromhos Oct. 1, 1941.

EXEMINES. --Values reported for dissolved solides are sums of determined constituents unless otherwise noted. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

Chemical analyses, in parts per million, water year October 1954 to September 1955

		ħ.	l								į	
		Color	_		_	_		80	_		_	
		H d	7.8	7.9	7.6	7.6	7.8	7.5	7.6	7.5	8.0	
	Specific conduct-	ance (micro- mhos at 25°C)	366	389	448	464	494	209	512	467	474	
	Hardness as CaCO ₃	Non- carbon- ate		œ	13	16	13	8	0	19	4	
	Hard as Ca	Calcium, mag- nesium	177	192	223	233	229	230	222	232	224	
	Dissolved	solids (mns)	a 242	221	262	266	280	278	294	268	288	
Der 1900		(NO ₃)	9.0	٥.	0.	6.	۲.	4.	1.1	1.1	₹.	
mandac on		Fluor ide (F)	0.1									
Chemical analyses, in parts per million, water year October 1954 to September 1955	;	Chloride (C1)	14	15	22	20	88	28	30	20	20	
ter year o	:	Sultate (SO,)	3.2	7.5	2.0	4.0	5.2	4.5	9.5	14	9.0	
million, wa	Bicar-	bonate (HCO ₃)	206	224	256	264	264	270	274	260	268	
parts per 1	Potas-	shum (K)	0.5	2		7						
aryses, m	;	(Na)	11	6	11	7.	15	17	26	11	16	
emicai an	Mag-	nesium (Mg)	6.0	5.4	6.9	9.6	9.6	11	7.9	9.7	6.5	
c.	Cal-	cium (Ca)	61	89	18	F	16	74	92	11	43	
		(Fe)	0.02	60	97	.05	8	8	.16	. 14	.03	
		(SiO ₂)	7.3	5.9	13	16	15	10	8.1	7.0	22	
	Mean	discharge (cfs)		_			101	269	P 220	919	099	
		Date of collection	Oct. 5, 1954	Nov. 22	Dec. 21	Jan. 27, 1955	Mar. 10	Apr. 21	June 4.	July 16	Sept. 6	

a Residue on evaporation at 180°C. b Stage-discharge relation indefinite because of operation of N. W. 36th St. dam; discharge computed on basis of 3 discharge measurements and record of dam operation.

FLA. TAMIAMI CANAL AT BRIDGE 45, 27 MILES WEST OF MIAMI,

LOCATION --At bridge on U. S. Highway 41, 27 miles west of Miami, Dade County. RECORDS WAILMABLE.-Chemical analyses: October 1953 to August 1953 to August 1955 of Content of the Station. REMARKS.--Values reported for dissolved solids are sums of determined constituents, unless otherwise noted. No discharge records available for this station.

Chemical analyses in parts per million, October 1954 to August 1955

	Color	ŀ						65		
	Hd	7.4	7.4	7.5	7.1	7.5	7.5	7.2	7.2	7.6
Specific conduct-	ance (micro- mhos at 25°C)	196	196	194	258	385	469	536	321	309
Hardness as CaCO,	Non- carbon- ate	1	-	c	8	18	8	21	co	14
Hard as Ca	Calcium, mag- nesium	88	88	88	132	172	208	188	144	142
	Dissolved solids (sum)	"				210	248	335	177	171
	(NO ₃)		-:		۳.	3.3	17	2.6	0.	Τ.
:	Fluoride (F)	0.0								
	Chloride (C1)	7.0	9.0	10	12	24	26	90	17	18
	Sulfate (SO ₄)	1.5	5.0	3.5	1.5	2.5	2.0	22	5.0	4.5
Bicar-	bonate (HCO ₃)	108	106	102	136	188	218	204	169	156
Potas-	sium (K)	0.2	7	0	0	8				4
:	Sodium (Na)	5.9	7.		٥.	ъ ъ	=======================================	41	==	7.
Mag-	nesium (Mg)	12	2.6	2.8	6.6	4.8	5.7	1.4	2.3	4.2
- leg	cium (Ca)			31				£	75	20
	(Fe)	0.07	<u>ස</u>	8	.02	8	.18	.05	5	90.
	Silica (SiO ₂)	11	12	2	1.5	12		35	5.1	9.3
Mean	discharge (cfs)									
	Date of collection	Oct. 1, 1954	Nov. 10	Dec. 16	Jan. 12, 1955	Mar. 15	Apr. 13	June 15	July 19	Aug. 31

a Residue on evaporation at 180°C.

CALOOSAHATCHEE CANAL AT MOORE HAVEN, FLA.

LOCATION...-At gaging station at Moore Haven, Glades County, 0.5 mile downstream from hurricane gate and lock 1, at Lake Okeechobee Outlet and 15 miles upstramm from Lock 2.

UDSTRAINED ANALLABLE..-Chemical analyses: March 1941 to February 1942, November 1954 to August 1955.

RECORDS ANALLABLE..-Chemical analyses: Maximum, 236 ppm Dec. 12-20, 1941; minimum, 38 ppm Sept. 1-10,1941.

Hardness: Maximum, 167 ppm Dec. 12-20, 1941; minimum, 28 ppm Sept. 1-10, 1941.

Specific conductance: Maximum daily, 556 micromhos Apr. 1, 1941; minimum daily, 63 micromhos Sept. 11, 13, 1941.

SPECIFIC CONDUCTANCE OF ANALLABLE CONDUCTA

		Color	100	2	20	2	24	45	22	22
		Hq	7.7	2.5	- <u>.</u>	7.6	7.1	7.2	7.2	7.2
	Specific conduct-	ance (micro- mhos at 25°C)	259	376	438	290	356	366	388	329
	ness CO,	Non- carbon- ate	18	29	46	22	28	0	29	30
	Hardness as CaCOs	Calcium, mag- nesium	93	148	184	107	132	128	135	123
	Dissolved	(mns)	148	215	251	173	194	233	208	188
1955		(NO ₃)	0.1	۳.	1.1	9.	2.	ω.	0.	~?
September		Fluor 1de (F)								
er 1954 to	:	Chloride (C1)	25	32	36	36	32	37	38	36
Chemical analyses, in parts per million, November 1954 to September 1955	:	Sulfate (SO ₂)	22	30	35	19	24	23	27	32
s per millio	Bicar-	bonate (HCO ₃)	85	145	168	100	127	169	129	113
es, in parts	Potas-	stum (K)	•	67	•	_	•	_	_	10
cal analyse	,	(Na)	1	23	ä	21	19	4	2	~
Chemi	Mag-	nesium (Mg)	5.6	6.6	12	7.8	9.7	8. 7	8.6	6.6
	Cal-	ctum (Ca)	28	43	ጁ	30	37	37	40	33
		(Fe)	0.11	8	3.	. 05	.02	8	.01	40
		(SiO ₂)	3,5	6.8	11	9.4	8.7	3.1	9.9	6.7
	Mean	discharge (cfs)	;	;	;	210	;	:	3, 110	026
		Date of collection	Nov. 10, 1954	Dec. 15	Jan. 27, 1955	Mar. 8	Apr. 26	June 1	July 18	Aug. 29

2022

Color

5885

LAKE OKEECHOBEE AND THE EVERGLADES -- Continued

CALOOSAHATCHEE CANAL AT ORTONA LOCK NEAR LABELLE, FLA.

LOCATION. -- At gaging station, 350 feet upstream from upstream end of lock chamber, 1‡ miles south of Ortona Station and 9.0 miles from LaBelle, Hendry

No discharge records available for this station. County. RECORDS AVAILABLE. --Chemical analyses: November 1954 to August 1955. REMARKS. --Values reported for dissolved solids are sums of determined constituents.

			L	_				_	_	
		pH	7.4	7.8	7.6	7.6	7.6	 	7 1	7.2
	Specific conduct-	ance (micro- mhos at 25°C)	279	329	429	281	411	447	391	318
	ness CO ₃	Non- carbon- ate					18			j
	Hardness as CaCO,	Calcium, mag- nestum	105	146	182	104	150	160	140	113
	Dissolved	solids (sum)	162	182	237	149	230	220	217	171
		Nitrate (NO ₃)	9.0	2.	7.	e,	4.	1.3	4.	2.
ugust 1955	:	Fluor ide (F)								
November 1954 to August 1955	:	Chloride (C1)	26	32	34	26	32	43	36	59
1, Novembe		Sulfate (SO ₄)	8	10	78	21	24	33	34	23
Chemical analyses in parts per million,	Bicar-	bonate (HCO ₃)	102	140	173	92	161	160	131	109
es in parts	Potas-	sium (K)	_	-	7	5	26	-	2	9
cal analyse	:	Sodium (Na)	-	_	_			e .	2	1
Chemi	Mag.	nesium (Mg)	7.3	9.4	11	7.1	8.6	9.3	11	7.5
	ig S	cium (Ca)				30	46			
		Fe)	0.02	8	.07	90.	.03	5	2.	.02
		Silica (SiO ₂)	11	7.3	6.6	3.0	11	4.1	7.1	5.2
	Mean	discharge (cfs)								
		Date of collection	Nov. 10, 1954	Dec. 15	Jan. 27, 1955	Mar. 8	Apr. 26	June 1	July 18	Aug. 29

ORANGE RIVER NEAR FORT MYERS, FLA

LOCATION.--At old staff gage site, 1½ miles southeast of Buckingham, and 8 miles northeast of Fort Myers, Lee County.
DRAINGE AREA.--83.4 square miles.
RECORD AVAILABLE.--Chemical analyses: November 1954 to September 1955.
RECORD.--Values reported for dissolved solids are sums of determined constituents. No discharge records available for this station.

		Color	æ	30	8	72
		Hď	7.8	7.7	7.2	7.4
	Specific conduct-	ance (micro- mhos at 25°C)	424	498	266	197
	ssau CO	Non- carbon- ate	16	30	10	٠.
	Hardı as Ca	Calcium, Non- mag- carbon- nesium ate	194	219	102	84
		solids (sum)	232	264	145	117
55		(NO ₃)	0.1	٥.	e.	0
tember 19		Fluoride (F)				
Chemical analyses in parts per million, November 1954 to September 1955		(C1) (F)	26	37	24	12
November		Sulfate (SO ₄)	6.0	9.2	8.5	3.5
er million,	Bicar-	bonate (HCO ₃)	217	230	112	92
in parts p	Potas-	sium (K)	2		15	3.7
al analyses		(Na)	**	-	=	
Chemic	Mag-	nesium (Mg)	9.6	12	4.8	2.2
	cal-	cium (Ca)	62	8	33	30
	į	(Fe)	0.31	홍.	8	8
	200	(SiO ₂)	8.7	10	4.8	16
	Mean	discharge (cfs)			•	
		Date of collection	Nov. 10, 1954	Jan. 11, 1955	July 26	Sept. 21

WITHLACOOCHEE RIVER BASIN

WITHLACOOCHEE RIVER NEAR HOLDER, FLA.

DOCATION. --At gaging station, 100 feet downstream from bridge, on State Highway 200, and 4½ miles northeast of Holder, Citrus County.

DRAINAGE ARM.-1.710 square miles.

RECORNS ANALLABLE.-Chemical analyses: January 1950 to December 1951, September 1954 to September 1955.

Mater temperatures: January 1950 to December 1951.

EXTREMES, January 1950 to December 1951.-Dissolved solids: Maximum, 275 ppm July 11-20, 1950; minimum 119 ppm Sept. 21-30, 1950.

Hardoness: Maximum, 191 ppm July 11-20, 1950; minimum, 63 ppm Sept. 28, 1950.

Specific conductance: Maximum 92, 71 1950; minimum, 56 ° 7 Jan. 9-12, 1951.

Water temperatures: Maximum 92, 71 1950; minimum, 56 ° 7 Jan. 9-12, 1951.

EMBMRS.--Values reported for dissolved solids are residues on evaporation. Records of discharge for water year October 1955 at 1955.

Date of collection Mean (cfs) Stilica (cfs) Iron (cfs) Cal- (Fe) (Ca) Mag- (Mg) (Mg) Stum (Ma) (Mg) Potas- (BCa- (BCa) (Ca) (Mg) Bicar- (SO ₄) Sulfate (Ci) Sept. 21, 1954 560 4.1 0.5 4.2 4.7 4.3 4.3 126 17 8.5 Nov. 1 47 5.0 0.08 42 4.7 4.3 4.1 0.2 126 17 8.5 Nov. 1 47 5.0 0.08 42 4.7 4.3 1.2 126 17 8.5 Jan. 24, 1955 5.0 5.0 0.0 48 5.4 3.3 142 20 8.5 Feb. 28 491 5.7 0.1 47 6.7 4.6 1.35 28 10 Apr. 13 386 7.8 0.0 47 5.0 5.2 2.3 13 7.2 348 7.8 0.0 47 5.0 5.2 2.3 13 7.2	Chemical analyses, in parts per million, September 1954 to September 1955	, in parts per t	nillion, Sept	tember 195	4 to Septem	ber 1955				,			
discharge (Gio) Iron (circ) (Ca) (Mg) (Na) (R) (HCO ₂) (SO ₄) (cis) (Gis) (Ga) (Mg) (Mg) (R) (HCO ₂) (SO ₄) 542 4.7 4.3 4.3 4.1 126 15 550 4.1 .05 48 4.7 4.1 126 15 550 5.0 .01 48 6.1 5.4 4.6 132 20 550 5.7 .01 47 6.7 4.6 132 28 491 5.7 .01 47 6.7 4.6 3.3 131 28 806 6.5 5.0 5.2 5.2 28 28 28 28 28 3.3 131 32		Dotes	Bio a		i			Dissolved solids	Hardness as CaCO,	SSS O	Specific conduct-		
542 7.5 0.08 42 3.7 4.3 0.2 126 15 500 4.1 .05 42 4.7 4.3 0.2 126 17 472 5.0 .05 42 4.7 4.1 0.2 126 17 50 6.1 .05 48 5.4 5.3 20 20 491 5.7 .01 47 6.7 4.6 132 28 331 5.3 .00 48 5.6 5.0 .3 131 32 386 7.9 .00 47 5.0 5.2 135 23	Fe) cium nesium (Fe) (Ca) (Mg)	słum (K)				Fluoride Nii (F) (N	(NO ₃) or or or at		alcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	Нq	Color
500 4.1 .05 42 4.7 4.1 126 17 472 5.0 .02 48 5.4 3.3 142 20 550 5.3 .01 46 6.1 5.4 3.3 132 20 491 5.7 .01 47 6.7 6.7 4.6 136 28 331 5.3 .00 48 5.6 5.0 .3 131 32 386 7.9 .01 47 5.0 5.2 135 23 386 7.9 .00 47 5.0 5.2 130 33	0.08 42 3.7	0.2	126	15	8.5	0.0	0.0	7162	120	11	254	7.7	50
520 5.0 .02 48 6.1 5.4 3.3 142 20 491 5.7 .01 47 6.1 5.4 136 28 491 5.7 .01 47 6.7 6.7 4.6 136 28 331 5.3 .00 48 5.6 5.0 .3 131 32 336 7.9 .01 47 6.0 4.9 .2 135 23 336 7.9 .00 47 6.0 5.2 .2 135 23	.05 42 4.7	4.1	126	17	8.5	0.	~	167	124	21	252	7.6	90
520 5.3 .01 46 6.1 5.4 132 28 491 5.7 .01 47 6.7 6.0 .3 131 32 238 6.5 .00 48 5.6 5.0 .3 131 32 336 7.9 .00 47 5.0 5.2 .2 135 23	.02 48 5.4	3.3	142	20	8.5	0.	•	181	142	26	282	7.8	25
491 5.7 .01 47 6.7 4.6 136 28 331 5.3 .00 48 5.6 5.0 .3 131 32 286 6.5 0.1 47 4.6 5.2 135 23 336 7.9 .00 47 5.0 5.2 .2 135 23 7.9 .00 47 5.0 5.2 .2 130 33	.01 46 6.1	5.4	132	28	10	-	~7.	180	140	32	293	2.5	20
331 5.3 .00 48 5.6 5.0 .3 131 32 23 258 6.5 .01 47 4.1 4.9 .2 135 23 336 7.9 .00 47 5.0 5.2 .2 130 31	.01 47 6.7	9.4	136	28	 e	:	•	161	145	33	302	7.6	22
258 6.5 .01 47 4.1 4.9 .2 135 23 336 7.9 .00 47 5.0 5.2 .2 130 31	8.	 &;	131	32	8.5	<u>ښ</u>	-	185	143	35	315	7.6	15
336 7.9 .00 47 5.0 5.2 .2 130 31	10.	64	135	23	7.2	-:	۳.	188	134	24	290	7.5	01
	8	67	130	31	7.0		~7.	200	138	31	294	9.	20
9.3 .17 37 3.3 5.9 .6 97 21	.17	9.	9.4	21	10	~	.5	186	106	56	234	7.2	180
.08 22 2.5 1.8 .4 60 5.2	.08 22 2.5	₹.	8	5.2	8.8	7.		133	65	16	136	6.9	360

SUWANNEE RIVER BASIN

ALAPAHA RIVER NEAR ALAPAHA, GA

LOCATION.--Temperature recorder at gaging station near left bank on downstream side of bridge on State Highway 50, 2 miles east of Alapaha, Berrien County, and 6 miles upstream from Willacoochee River.

DRAINAGE AREA, --644 square mailes.

RECORDS AVAILABLE.--water temperatures: March 1953 to September 1955.

EXTREMES, 1954-55, -- "After temperatures: Maximum, 91°F Oct. 5; minimum, freezing point Nov. 3, 1954.

EXTREMES, 1954-55, -- "After temperatures: Maximum, 91°F June 29, 1954; minimum, freezing point Nov. 3, 1954.

REMARKS.--No flow October 1 to November 20. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

March 1953 to September 1955. Maximum, 88°P Cot. 5: minimum, freezing point Nov. 3. 1954. Maximum, 91°P June 29, 1954; minimum, freezing point Nov. 3, 1954. 20. Records of discharge for water year October 1954 to September 1955 given in WSP 1384.

Temperature (°F) of water, water year October 1954 to September 1955

ı	ı	ŧ																											ı	1
	September	uim	88	3 2	2 2	11	18	62	62	2 22	80	79	6 1	9 8	2	= 1	Z F	: 2	18	92	F 1	= [£ 2	. 2	3 5	192	92	77	:	48
	Septe	тах	2 6	:	8	80	49	18	8	3 2 8	81	8	8	20 00	2	2	3 3	3:	77	7.2	28	9 9	4 -	2	2	2 =	28	78	:	79
	ust	min	48	3 2	82	82	80	42	8 2	20 60	4	49	62	9 2	9	æ :	P 0	8	81	81	8 2	20 00	- 5 5		2 6	2 2	49	62	2	8
	August	max	81	3 2	2	2	84	8	62	2 6	8	8	80	6.0	2	8 8	81	8 8	82	83	2 5	2 2	2 G	i	5 &	8 2	81	81	3	81
	Ď	min	0.5	2 5	20	73	2	23	2	6.2	75	15	48	- 1	=	48		92	11	75	9 1	6 6	. č	` a	2 2	. 2	81	8	2	92
	July	max	8.0	8	8 8	80	82	83	8 2	8 6	19	81	85	2 6	20	200	88	8	82	83	83	20 0	. 6	ä	3 8	8 2	83	81	8	82
	9	min	9.5	2 5	1 2	75	92	11	5	2 2	. 75	72	27	5 5	9	1	3 5	69	10	11	72	2	. .		3 5	12	69	88	:	73
74	June	max	6.5	٤.	3.5	78	48	80	20	2 6	77	75	11	5 5	3	2	6 5	9 10	78	81	82	9 6	2 2	: 8	7 5		11	77	:	78
o nograpi	y	min	99	8	99	89	70	20	F 8	2 4	92	1	92	9. 2	*	2	2 6	4	47	74	2	2 6	. t	: :	. 2	62	4	62	4.	73
d ther	May	max	25	2 2	2	F	73	73	2.5	33	18	62	62	18	9	22	C 4	92	11	91	92	9 6	0 g	: 8	200	8 6	82	81	8	92
or water, water year October 1934 to September 1933 e attachment, continuous ethyl alcohol-actuated thermograph $\overline{\lambda}$		min	25.0	3 6	200	8	2	99	္မွ	9	19	62	2	99	8	67	29	8 8	2	Ľ	2	= =	2:		2 8	8	49	67	:	99
alcohol	April	max	28	3 2	2 2	2	99	99	65	2 8	62	2	8	8 8	3	8	9 5	2 2	11	72	25	2 5	9 %		9 6	9	2	2	:	67
ctoper is ethyl	ch	mim	9 6	2 6	20	99	67	65	5	2 %	88	61	65	67	5	67	9 5	2	11	72	88	2 8	3 %		8 8	9 92	54	26	24	64
year O	March	max	62	5 5	99	67	69	69	2 8	20 00	19	65	88	80 6	3	2	= =	2 2	23	74	7:	* 5	6 8	; ;	8 8	3 2	29	9	8	67
	L	min	42	4.7	- 8	4.1	49	51	\$:	2 2	22	48	4	24.4	ŗ	46	4 2	22	23	25	2	2.0	8 8	: :	, t	200	1	1	:	21
n Water attachr	February	max	4.	64	49	49	21	2	8	22 23	2	23	8	£ 5		49	20.0	3 %	52	26	8	20 20	8 8	. 6	2 2	6	1	:	:	53
Temperature ('F) of water, wa Recorder with temperature attachment,	ary	nim	5.1	3 4	8	2	52	49	4:	51	64	4	# :	3 5	7	4.	7.4	8	46	4	4	-	\$ 4	: 5	2 6	3	44	43	42	46
remperature (* f.) r with temperatur	January	max	57	3 6	3 2	62	28	26	2,	5.0	23	20	47	2 2	3	20	9 0	2 2	48	47	20	9	46	; ;	9 4	46	46	46	44	51
rderwi	ber	mim	42	4.2	40	45	20	45	27	t 4	39	39	4.1	2 6	2	9	2 4	5.5	39	36	36	4:	4 4	: ;	£ 2	2 2	22	25	4.1	44
Reco	December	max	57	. e	3 2	ž	25	2	46	8 &	47	49	49	94		4	. a	46	43	43	41	2 9	2 0		8 5	- 00	9	29	54	51
İ	ber	mim	35	2 6	9 65	43	37	36	36	8 1	8	20	39	7.0	3	27	2 2	22.52	20	42	37	\$ 5	2 %	-	9	2 10	22	45	:	45
	November	max	65	3 2	. 62	29	28	62	8	629	63	92	69	9 8	3	67	5 8	8 6	51	69	62	200	2 %		8 9	8 5	8	26		61
	er	min	0.0	3 5	2	12	F	8	20	2 2	8	65	8	20 C	e 6	8 4	2 4	8	48	42	43	£ ;	- 64		3 2	28	26	45	37	57
	October	max	18		2 2	98	85	11	25	5 E	- 1.1	- 62	6	9 2	9	99 ;	0 E	8	99	67	F :	2 2	7 2	- 2	0 8	92	69	29	60	74
	1 10	Cay	1	es es	4	5	9	T	80 0	10.	11	12	13	15		16	17	19	20	21	22.	233	24.		20	28	29.	30.	31	Average

SUVANNEE RIVER BASIN -- Continued

SUWANNEE RIVER AT BRANFORD. FLA

Highways 27 and 129 at Branford, Suwannee County, 10% miles upstream from Santa Fe River. ,090 square miles, approximately. station at bridge on U. S. LOCATION. --At gaging NRAINAGE AREA. --7,090

January 1954 to September 1955. RECORDS AVAILABLE. -- Chemical analyses:

Water temporatures: January 1854 to September 1955.

Water temporatures: January 1854 to September 1955.

Water temporatures: January 1854 to September 1955.

Water temporatures: Maximum, 177 ppm Dec. 11-20, January 1859 ppm Sept. 21-30.

Bardness: Maximum, 177 ppm Dec. 11-20, Jan. 1-10, Jan. 1-10, Jan. 1-10, Jan. 1-10, Jan. 1-10, Jan. 1-10, Jan. 1-10, Jan. 24 ppm Mar. 11-20, Dec. 11-20, 1954; Maximum daily, 455 morphology and Jan. 24 ppm Mar. 11-20, Jefs. Jan. 24 ppm Mar. 11-20, Jefs. Jefs. Jan. 24 ppm Mar. Jan. 24 ppm Mar. Jan. 24 ppm Mar. Jan. 1-10, Jan. 1-20, Jefs. Jefs. Jan. 24 ppm Mar. Jan. 1-10, Jefs. Jefs. Jan. 24 ppm Mar. Jan. 1-10, Jefs. Jefs

1955
r 1954 to September
2
1954
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rvear
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in parts per million.
Der
parts
=
analyses.
Chemical

S	UWANN	VEE RIV	ER I	BAS	IN														29
		Color	55 5	3 9	01	99	22	121	2 62	818	77	8	8 2	88	8	52	22	8	110
		Hq .	8.6	. 8.	8.0	n 0.	6	2.7		6.1		8 1	- 4	. 8	7.5	4.7	7.5	7.7	7.1
	Specific conduct-	ance (micro- mhos at 25°C)	318	330	327	330	331	347	348	349	000	308	266	292	305	316	334	317	196
	ess CO,	Non- carbon- ate	26	3 23	22	22 22	22	31	3 8	88	92	24	2 2	15	22	17	17	19	14
	Hardness as CaCO,	Calcium, mag- nestum	165	169	170	172	170	177	174	177	176	155	130	136	146	153	156	151	88
	Dissolved solids	(residue on evap- oration at 180°C)	207	214	209	210 208	707	224	220	216	216	191	176	183	179	195	197	189	149
er 1955		Nitrate (NO ₃)	9.0	i ri	4.	œ, r-	٠	9.	si rei	نة .	ė.	œ, ı	~ <	. 0	۲.	۲.	r,	۲.	o,
o Septemb		Fluoride (F)	0.1	- ~	~!	ui ui	-	: -:	- 2	· i	N.	wi.	4. 0		8	~.	83.	e,	<u>س</u>
Chemical analyses, in parts per million, water year October 1954 to September 1955		Chloride (C1)	5.8	. cz	2.5		10	1	E 01	2:	22	7.2	 	0.6	8.8	7.5	2	8.5	2
er year Oc		Sulfate (SO,)	22.5	3 23	22	222	-	22	22 22	22	72	22	61 0	19	82	8	21	21	13
dllion, wat	Bicar	bonate (HCO _{\$})	170	181	180	182	5	178	174	181	171	160	88	148	151	153	170	161	84
arts per m	Potas-		9.0	i. 4	4.	ৰ ব	•	4.	4 4	4.	ĸ.	4.	۰.		ī.	e.i	∞.	9.	0.1
dyses, in p	:	Sodium (Na)	4.0	o. 4.	3.9	8.8 6.6	, 4	0.4	4. 4 0 %	0.	2.	65.	0,0	9 60	4.8	e.	4.7	5.3	6.2
mical ana	Mag-	nesium (Mg)	=:	12	1 =	12	-	12	12	12	13	=	 	. 6	9.	55	9	10	5.7
ວັ	[#S	ctum (Ca)	84 4	6 6	20	2 2	9	25	2 2	25	64	44	99	8 8	\$	45	46	4	24
		Fron (Fe)	0.01	20.	20	20.00	č	5.5	8,6	8	.12	90.	9.5	8.8	.05	40.	80.	.07	.26
		Silica (SiO ₂)		12.0	1 11	9.9	Ř	22	12	123	2	14	12	13	13	13	==	12	10
	Mean	discharge (cfs)				1,753		1,719	1,675	1,637	1, 763	1,807					1, 798	2, 105	3, 196
		Date of collection	Oct. 1-10, 1954	Oct. 21-30	Nov. 1-10	Nov. 11-20 Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-20	Mar 1-10	Mar. 11-20	Mar. 21-31	Apr. 1-10	Apr. 11-20	Apr. 21-30

SUWANNEE RIVER BASIN--Continued

SUWANNEE RIVER AT BRANFORD, FLA. --Continued

ı			ı														1	
		Color	99	8	8	8	8	12	5	12	15	12	8	8	33	120	450	41
		Hq	7.4	7.5	9.2	7.4	7.4	7.6	7 8	7.6	7.4	7.7	7.6	7.7	7.8	7.6	7.3	7.6
	Specific conduct-	ance (micro- mhos at 25°C)	257	292	302	288	319	333	338	334	337	332	331	321	306	236	133	308
	ness CO,	Non- carbon- ate	14	91	15	13	22	19	10	ន	20	17	23	ន	16	12	6	20
	Hardness as CaCO,	Calcium, mag- nesium	119	140	143	134	155	160	162	162	162	160	164	158	146	112	63	151
penuj	Dissolved solids	(residue on evap- oration at 180°C)	164	176	180	181	195	201	212	213	203	203	207	201	189	164	139	194
955Cont		(NO ₃)	1.0	1.0	80.		G.	œ.	4	. 6.	1.4	80.	s.	e.	ø	8.	.5	9.0
ptember 1	:	Fluoride (F)	0.2	~	۲۶.	<u>د</u> .	e.	7.	-	. 67	8	ņ	~?	Ξ:	7	-:	.1	0.2
water year October 1954 to September 1955 Continued		Chloride (C1)	7.8	8.8	6.5	8.0	8.0	7.8	8	2.2	2.2	8.9	7:5	7.2	8.2	2.2	5.2	7.8
sar October		Sulfate (SO ₄)	16	17	19	80	22	23	23	23	24	24	54	24	22	18	10	. 12
ı, water ye	Bicar-	bonate (HCO ₃)	129	152	156	148	165	172	175	174	174	175	172	168	158	118	65	159
per millio	Potas-	sium (K)	9.0	80.	∞.	9.	s.	9.	4	6	4.	4.	œ.	4.	4	ď	1.0	5
Chemical analyses, in parts per million,	;	(Na)	4.9	4.4	4.7	6.6	4.8	4.3	4	2.5	2.2	4.6	4.8	4.7	8.4	5.2	4.2	4.6
al analyses	Mag-	nesium (Mg)	7.8	9.5	8.6	8.9	==	=	=	:=	=		12	=	10	7.8	4.3	10
Chemics	Cal-	cium (Ca)	35	41	43	33	44	46	47	4.7	47	46	46	45	42	32	18	44
		(Fe)	0.18	.0	8	80.	.02	10.	5	. 5	0.	6.	5	.05	90	17	.36	0 07
	į	(SiO ₂)	2	07	10	13	11	8.8	7	: 2	9.5	=	12	13	8.6	10	7.8	13
	Mean	discharge (cfs)						1,612	1.595	1,613	1,621	1,626	1,670	1,733	1.937	2,851	4,022	1.950
		Date of collection	May 1-10, 1955	May 11-20	May 21-31	June 1-10	June 11-20	June 21-30	July 1-10	July 11-20	July 21-31	Aug. 1-10	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average

SUWANNEE RIVER BASIN

SUWANNEE RIVER BASIN -- Continued

SUWANNEE RIVER AT BRANFORD, FLA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	68	67	68	62	71	63	73	78	80	80	80
2	78	68	76	68	64	69	65	72	76	79	80	80
3	79	67	64	68	65	69	65	73	77	82	80	80
4	80	66	64	69	62	70	67	74	77	80	83	78
5	80	64	64	69	64	70	67	74	78	81	83	80
6	80	63	60	69	65		67	75	78	82	82	83
7	78	84	59	69	66	68	72	76	77	81	83	80
8	79	65	62	68	65	67	70	78	77	82	82	82
9	79	66	62	68	64	66	70	77	76	79	82	80
10	76	65	60	69	65	66	71	78	78	79	82	79
11	79	65	60	65	64	68	71	78	77	79	84	80
12	78	67	62	65	59	69	72	78	77	78	82	80
13	78	65	62	60	57	72	73	77	77	79	l	79
14	78	69	60	62	60	71	73	78	77	83	83	79
15	75	70	60	62	62	72	72	75	77	81	81	80
16	73	70	60	64	63	73	73	75	76	81	81	79
17	71	73	61	62	64	73	75	75	75	81	81	78
18	71	72	59	62	65	73	74	75	75	82	82	78
19	70	70	60	62	65	74	74	73	76	82	82	78
20	70	75	59	60	67	73	75	77	76	82	82	79
21	70	76	59	62	67	75	75	77	79	83	81	79
22	70	66	59	63	68	73	74	76	80	81	82	81
23	70	65	62	59	68	69	75	78	80	80	82	79
24	70	65	62	56	67	70	75	79	80	80	82	79
25	70	63	62	59		71	76	79	79	79	81	80
26	70	60	64	59		70	73	79	82	80	79	80
27	70	64	70	60	68	78	70	79	78	79	80	79
28	74	66	68	60	1	62	73	80	80	83	80	78
29	74	66	69	59		62	74	80	78	80	80	80
30	69	66	68	60		63	73	79	78	80	83	79
31	68	<u> </u>	68	60		61		78		80	81	
Aver- age	74	67	63	63	64	70	72	77	78	81	82	80

ESCAMBIA RIVER BASIN

ESCAMBIA RIVER NEAR CENTURY, FLA.

LOCATION. --At gaging station, 16 feet downstream from bridge, on State Highway 4, 1.2 miles downstream from Escambia Creek and 1% miles east of Century,

Escambia Court. Local Land of the Recambia Creek and 1% miles east of Century, Brainian Greek and 1% miles east of Century, BRAINAGE AREA.—3617 square miles (revised).

BROONES ANGLABLE.—Chemical analyses: January 1952 to December 1953, September 1954 to August 1955.

Water temperatures: January 1952 to December 1953.

EXTREMES, January 1952 to December 1953.

EXTREMES, January 1952 to December 1953.

Extremes: Maximum, 43 ppm Aug. 3, 6-10, 11-144,1953; minimum, 61 ppm Apr. 1-6, 9-10, 1952, Dec. 21-30,1953.

Specific conductance: Maximum at 11, 178 micromhos Aug. 27, 1953, minimum daily, 22.4 micromhos Feb. 15, 1953.

RAMENES, -Values reported for discolved solids are residues on evaporation at 180°C. Records of discharge for water year October 1954 to September 1955 are given in WSP 1384.

					Chemic	al analyse	s, in part	s per milli	on, Septem	Chemical analyses, in parts per million, September 1954 to August 1955	August 195							
	Mean			Cal	Mag-		Potas-	Bicar		:	:		Dissolved	Hardness as CaCO,	ess 20,	Specific conduct-		
Date of collection	discharge (cfs)	Silica (SiO ₂)	Fe)	cium (Ca)	nesium (Mg)	Sodium (Na)	sium (K)	bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (C1)	Fluoride (F)	Nitrate (NO ₃)	(residue on evap- oration at 180°C)	Calcium, mag- nesium	Non- carbon- ate	ance (micro- mhos at 25°C)	рĦ	Color
Sept. 21, 1954		7.5	0.09	12	1.7	10	9.0	35	2.2	22	0.0	0.0	98	37	8	133	7.3	10
Nov. 2		6.5	60.	10	1.2	6,0	₹.	34	3.0	13	٦.	۳.	20	30	63	94. 2	7.1	14
Jan. 25, 1955	2,480	9	. 27	9.0	1.6	e,	8	14	8.5	11	;	Ψ.	75	58	18	92.8	7.3	45
Mar. 8	2,060	10	.35	8.8	1.7	4	6	28	7.2	7.5	ŀ	e.	98	58	···	78.0	7.1	45
Apr. 20		7.9	. 39	4.7	1.0	1.1	1.6	18	4 .0	3.2	23	2	69	91		48.0	6.5	20
May 31	8, 190	7.7	. 84	7.4	۲-	3.0	1. 4	23	2.8	5.8	۰.	1.1	72	21	63	98.0	6.5	100
July 12	2,520	7.3	. 15	8.9	•	5.0	∞.	28	4.0	8.5	=:	₹.	8	25	8	79.9	8.8	45
Aug. 26	1,780	9.6	8.	9.6	1.1	3.8	89.	32	3,2	7.2	87	₹.	62	28	~	81.3	7.1	45

ESCAMBIA RIVER BASIN -- Continued

PINE BARREN CREEK NEAR BARTH, FLA.

	Hardness as CaCO,	Calctum, Non- ance pH Color mag- are ase 25°C)		_	4 0 18.9 5.9 12	8.8	6.1	5.9	4 2 21.4 5.1 35	6.1	
	Dissolve solids	(residue on evap- oration at 180°C)	16	11	18	8	27	22	68	11	
٠		(NO _s)	9.0	e.	4.	=:	0.	e.	-:	4.	
ngust 195	:	(C1) (F)	0.0	۲.	٦:	- :	~	0.	Ξ.	۰.	
r 1954 to A	;	Chloride (C1)	3.2	3.2	3.5	3.0	2.5	4.5	8.7	3.2	
Chemical analyses, in parts per million, November 1954 to August 1955	;	Sulfate (SO ₄)	1.2	2.0	2.0	٠.	1.5	~	.5	8.	
per million	Bicar-	bonate (HCO ₈)	7	4	4	2	ıs	9	es	9	
, in parts	Potes.	sium (K)	0.0		~	~	·	4.	₹.	8.	
al analyses		Na)	1.5	1.8	1.9	1.8	2.2	2.0	2.1	1.8	
Chemica	Kaga	nesium (Mg)	0.5	4.	4.	1.0	4.	e.	e.	.5	
	Cal-	ctum (Ca)	9.0	_	89.	∞.	۰.		1:1	4.	
		(Fe)	0.18	=	. 15	.37	. 25	. 47	₹.	. 27	
		Silica (SiO ₂)	6.7	7.0	7.0	8.3	6.9	8.8	6.4	7.0	
	Moan	discharge (cfs)	65	5	98	65	130	83	321	99	
		Date of collection	Nov. 2, 1954	Dec. 15	Jan. 25, 1955	Mar. 8	Apr. 19	May 31	July 13	Aug. 26	

ESCAMBIA RIVER BASIN--Continued

PINE BARREN CREEK NEAR BARTH, FLA. -- Continued Temperature (°F) of water, October 1954 to April 1955

1																																	1	
	September	min													_										_								1	_
	Sept	max																																
	August	min											_																					
	Aug	max																																
	у	min																																
	July	max																	_														1	
	_	min		_								_					_							_							_		1	7
7	June	max										_												_				_					1	
Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph/		Ë				_	-						_		_		_																1	
therm	May	max m								_			_					_			_			_	_					_			+	-
actuate	_	u	. 9		29	9		65	- 9	- 2	-	_				2		83	_		,		•	-	•	;	•	•	:	:		:	;	
lcohol-s	April	8	28 2		_	_	_		_	99	_		_		65	_	_	64 6	<u>'</u> :	-	_	;	;	· ;	;	:	;		:	;	:	-	:	-
ethyl a	_	ı max	83		2	35	35	35	69	24	75	26	- 08	22	98	98	67	67	37	37		37	38	61	22	22	- 28	- 82	75			23	7	61
Snonu	March	min			65			_		29					_			69				_		_			_	62	_			_	4	25
t, cont	Ľ	max	9	9		•	_	-		מו	2	•		- 6		9	9	9	•	-	9	9	9	9	9	_	S.	-		<u>د</u>			_	_
chmen	February	min	49	21	22	25	54	54	8	22	2	20	51	4	45	45	46	20	25	72	22	22	57	28	24	24	28	26	24	8	!	!	!	8
ure atta	Feb	max	51	22	22	22	25	22	22	53	2	25	23	2	47	46	2	25	24	22	22	21	28	28	59	24	28	24		_	;		1	25
mperat	January	min	24	22	22	24	28	28	28	22	22	22	22	23	52	20	8	53	53	83	23	21	51	21	21	49	48	48	49	49	49	48	4 8	25
with ter	Jan	max	99	24	28	29	29	29	29	26	22	28	28	25	23	25	8	53	23	33	23	ន	21	S	23	21	49	49	49	20	20	49	49	25
order	nber	min	53	2	22	53	25	22	52	25	25	25	20	20	20	21	21	20	20	21	2	48	47	48	49	21	21	25	25	22	24	75	53	25
Rec	December	max	54	24	20	2	24	26	22	25	22	54	22	8	25	25	51	51	25	25	2	20	48	49	21	21	25	25	22	24	29	23	54	53
	per	min	28	24	20	22	22	22	29	29	24	28	28	23	9	9	61	62	8	62	62	28	26	22	24	54	5	53	24	2	22	54		25
	November	max	29	28	24	20	24	28	26	22	28	20	29	9	8	62	62	63	8	8	62	9	28	26	22	22	22	25	22	28	28	24	:	28
	er	min	72	72	72	72	73	73	53	72	2	20	20	- 02	12	71	89	49	62	61	62	19	61	61	61	62	62	63	25	65	8	62	29	67
	Octob	max	74	73	2	74	74	74	74	73	22	11	7.1	71	7	12	72	89	4	63	8	63	62	82	8	63	63	64	65	67	67	99	62	89
	-	1-	::	:	:	:	:	:	-	:	:	:	 :	:	:	:	:	:	:	:	:	:	:	:	:	:	:	-	:	-	:	- :	<u>ا</u> ۔	
		Day		2					7	8	6	10	11						17	18	19								27					Average
			1		٠ :	4.		6			6		11	12			15	16	17	18.	.:	20			23	24.	25	26	27	28		30.	31	

PEARL RIVER BASIN -- Continued

PEARL RIVER AT JACKSON, MISS. -- Continued

LOCATION.--Temperature recorder at gaging station at bridge on U. S. Highway 80 (old) at eastern city limits of Jackson, Hinds County, 0.2 mile upstream from Illinois Central Ralized bridge, a quarter of a mile upstream from Town Creek, and 4½ miles upstream from Richland Creek. DRAIMABLE.-3.100 square miles (approximately)

RECORDS AVAILABLE.-Water temperatures: January 1954 to September 1955.

RECORDS AVAILABLE --Water temperatures: January 1954 to September 1955.

RECORDS 1955.-Water temperatures: Maximum, 897 Poct. 5; minimum, 437 Jan. 29-30.

REXTREMES 1954-1955.-Water temperatures: Maximum 92° P Aug. 17-18, 1954; minimum, 43° P Jan. 29-30, 1955.

REMARKS.--Records of discharge for water years 1954 and 1955 given in WSP 1334 and 1384

Temperature (°F) of water, January to September 1954

	1	e.	81	9	6	6	0	II.		<u>.</u>	35	22		2	5	9	2	8	<u>8</u> 0	61	Ξ.	31	19	92	22	22	92	,	9	7.1	=	088	: :	78
	September	x min	87 8			_		_	_	_	_		_			_		_	_			_	84 7				_				_	488	_	98
	Š	B	-	_		_	_								_	_	_					_			_			_	_					┝
	August	r min	8	_	_			_	_	_	87	_	98	_	_	_	_			_	_		98		-	_				_			_	98
		max	88	_			,		_		- 8				_	-	_		_	_	_	_	- 88				-			_		86		68
	July	uju	18	_		89 87		_		_	98 86	_	98 86	_	_	_		87		_	_		89 87	_	_	_	_	_			_	87 85		88 86
		max	_			_	-		_	_				_	_				_		_	_			_	_			_		_			+
	June	min	8	8	81	79	11	- 77	18	80	81		84	82	82	82	8	83	8	- 8	84	8	85	82	98	82	98	-	8.4	- 6	æ	88	-	83
/ud		max	L		_		19				82		88	_	_	_	_	85	_			_	98				_		_			86	-	98
rmogra	May	min	2	_		_			- 26	2	- 2	25		- 69	-	<u></u>	66		9	9	9	-	63			_			_	_	_	4.0		L
ted the	_	max	72	71	11	89	99	65	64	64	- 64	4	64	63	63	63	63	62	62	63	63	63	99						_		_	F8		L
alcohol-actuated thermograph/	April	mim	28	28	28	29	29	29	9	61	64	65	99	89	89	69	2	67	99	99	65	65	65	65	9	99	67		67	89	66	25	: :	65
alcoho	Αŗ	max	29	28	28	29	28	9	61	64	65	99	89	89	69	2	10	70	89	67	65	92	65	65	65	67	89		89	69	1.	22	3 ;	99
Recorder with temperature attachment, continuous ethyl	March	min	53	53	23	21	20	21	20	20	20	51	23	26	20	57	25	53	20	23	54	57	58	28	28	28	62		19	9	29	29	99	55
ontinuo	Ma	max	54	23	25	53	51	51	51	51	21	53	99	29	9	59	57	55	75	75	28	9	9	29	9	62	62		62	62	ક	99	88	57
nent, c	uary	mim	49	48	49	49	49	49	48	49	48	48	48	49	49	20	20	20	20	5	21	21	25	22	22	23	23		23	S	25	:	: :	20
attachi	February	max	49	49	48	48	49	49	48	48	49	48	49	20	20	20	20	5	15	2	2	22	25	23	23	23	23		23	Z	Z ,	;	1	21
erature	lary	min	;	;	;	;	;	j	;	;	;	;	;	;	;	;	1	;	;	;	:	1	1	}	;	1	49		49	48	20	49	4 4	1
h temp	January	max	:	1	;	:	!	1	;	1	1	1	1	1	;	ł	;	-	;	1	;	ŀ	;	1	1	;	48		49	20	22	20	49	1
der wit	nber	mim																																
Recor	December	max								_							_									_								Ī
	per	mim				_						_					_							_					_					
	November	max		_						_			_							_				_										T
	ær	mim								_	_	_	_		_					_			-										_	İ
	October	max										_					_					_				_						_	_	
	, e C		1	2	3	4	2	6	7	8	9	10	11	12	13	14	15.	•	17		5	20.	21	22	233	24	25.	9		27	28	30	31.	Average

PEARL RIVER BASIN--Continued PEARL RIVER AT JACKSON, MISS.--Continued

Temperature (*F) of water, water year October 1954 to September 1955 / Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph/

1																																	
	September	min	8	79	42	42	8	19	62	42	79	. 6	2 2	3 2	. č	3 5	:	92	- 12	-	1.1	=	-	- 2	2 5	-	92	2 5	= =	= :	= 1	= 1	78
	Sept	max	81	8	8	8	8	80	2	8	88	8 8	3 8	3 2	2 2	2 2	2	18	12	28	18	<u> </u>	6 6	2 2	2 2	2 82	2	2 6	2 2	2 2	2 6	2 :	79
	August	uim	80	٤	48	28	82	48	42	62	48	. 6	- 6	2	8 8	3 8	8	8	8	8	88	8	8 8	5 5	9 6	2 2	1 8	7 2	2 2	7 2	5 5	8 8	8
	Aug	max	80	8	42	2	48	62	42	13	43	9 9	2 8	8	8 8	3 8	8	8	8	8	2	.	88	8	9 6	8 8	8	200	3	7 2	82.0	82	8
	July	uju	8	8	8	8	42	79	8	82	88	7 6	38	3 8	3 8	3 8	2	42	18	82	9 2	<u>.</u>	42	2 5	: E	- 82		2 5	2 2	2 5	2 6	2 8	8
	J.	max	83	82	8	8	8	80	88	\$	%	3 2	5 2	5 6	3 2	9 6	2	42	4	48	49	<u> </u>	48	2 2	2 2	2 2	: 8	3 8	2 2	2 2	5 3	9 6	8
	June	min	74	74	74	74	74	74	73	73	73	3 5	2 5	3 5	2 %	2 2	•	74	16	16	F E	=	2 2	2 2	2 2	2 22	: 6	2 5	z :	2 3	= 3	ਡ ¦	28
بار ا	Ju	max	74	74	74	74	74	74	74	52	55 5	3 5	2 6	2 5	2 2	2 2	£	18	1	28	29	2	42	2 6	3 8	8	: 8	9 0	2 6	200	82	70 : 20 :	77
mogra	ty.	min	65	65	65	25	49	64	20	\$	65	8 8	3 5	- 6	5 8	9 8	2	89	89	69	8	2	2.5	2 2	2 :	102	2	2 ;	7.	7.7	2	7.4	68
ted ther	May	max	99	65	65	65	4	2	2	65	65	8 8	5 6	- œ	8	9 9	8	89	69	69	2 2	=	2 2	2 :	= =	: =	! ;	= 1	2 2	2;	7.	4 7	69
continuous ethyl alcohol-actuated thermograph/	11	min	29,	28	22	22	22	26	28	21	28	8 2	9 0	2 0	9 8	3 8	3	90	61	62	62	70	63	3 3	5 3	92		200	8	8	99	8 1	90
alcoho	Apri	max	26	8	26	22	8	28	24	28	28	8 6	9 6	8	8 8	3 6	3	91	62	62	62	3	63	2.3	5 4	8		8 8	8 8	2	99	8 1	61
us ethy	ų o,	min	22	22	20	22	28	28	28	28	80	8 2	3 0	8 8	3 6	9 6	3	62	9	62	62	3	5 6	70	3 8	200		3 8	200	6	24	26.00	28
ontino	March	max	22	28	28	26	22	28	29	8	20	8 2	3 6	8 6	3 8	3 8	2	62	62	62	8 62	70	8	3 6	2 2	9		3 8	3 8	2	57	2 6	29
	ary	min	44	45	47	47	4.	48	20	20	200	8 =	3 5	200	3 2	3 8	č	25	25	22	3 23	3	\$	\$ 1	5 8	3 4	; ;	.	\$	2	:	1 1	51
attach	February	max	45	47	44	41	48	20	20	20	8 2	7 E	3 6	2 6	3 6	9 6	70	25	25	25	8:	8	% :	8 3	5 2	5 2	: :		\$ 1	S	:	: :	52
Recorder with temperature attachment,	ary	min	54	75	ጄ	2	\$	22	22	22	22	8 2	5 6	3 6	3 8	2 .	5	48	47	84	4:	-	42	£ :	2 3	: 4	: :	‡	4:	4	3	43	- 64
th tem	January	max	54	72	\$	\$	22	28	22	22	55	8 4	3 7	5 6	2 2	5 5	4	48	48	48	8 :	ř	4.		2 4	4	: :	‡:	4:	44	44	4 4	20
rder w	per	min	19	5	21	20	21	51	49	49	64	2 4	2	P 6	7 2	; ;	4.	46	47	41	46	ç	4	£ 5	2 5	. 4	: 5	540	2 (2	32	2 2	49
Reco	December	max	52	25	25	21	54	25	21	49	8	8 8	2 9	2 6	3 9	2 5	5	48	48	48	47	ę	9 :		7 9	6 4	: 5	2 :	7 2	8	28	0 K	20
	per	mim	51	48	44	21	20	20	20	25	53	8 2	3 8	8 6	5 6	9 6	ê	28	88	28	28	ŝ	22	, G	2 5	200			2:	7	25	; ;	53
	November	max	90	26	23	53	54	22	20	26	26	8 4	5 5	6 0	9 6	9 6	200	28	29	29	28	200	28	6	5 6	2 10	: :	2 :	٦ ا	2	2	2	28
	ler	min	80	20	92	18	42	80	42	74	22	£ 6	0 8	0 2	0 g	2 8	200	63	8	62	8	70	8	2 5	3 3	. 8	3 8	8 3	80	8	8	23 2	8
	Octob	max	98	87	84	88	88	88	83	11	88	6 3	5 6	P 6	- 6	3 5	•	2	2	72	89	8	65	8 8	2 6	- G		= 1	2 2	2	65	9 6	75
	-		:	:	:	:	-	-	:	:	-	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	<u> </u>
		r r	1	2		4	2	6	T	8	9	11.	4.0	14	14		To	16	17	18	19	,	21	22	40	25		Z6	Z7	28	239	30	Average

PART 3A. OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

OHIO RIVER MAIN STEM

MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO ALLEGHENY RIVER IN NEW YORK

Color Ħ Specific conduct-ance (micro-mhos at 25°C) Non-carbon-ate Hardness as CaCO₃ Total Dissolved solids (residue on evap-oration at 180°C) Nitrate (NO₅) Chemical analyses, in parts per million, water year October 1954 to September 1955 Fluoride (F) Chloride (C1) Sulfate (SO,) Bicar-bonate (HCO₃) Potas-stum (K) Sodtum (Na) Mag-nesium (Mg) Cal-Cium (Ca) Iron (Fe) Silica (SiO₂) Mean discharge (cfs) Date of collection

7.5 0.63 109 19 267 3.0 96 526 0.0 1.1 (b)	350 271	2,050 7.1
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TUNUNGWANT CREEK AT LIMESTONE

OHIO RIVER MAIN STEM -- Continued

ALLEGHENY RIVER AT RED HOUSE, N.

LOCATION. --At highway bridge about 400 feet downstream from gaging station in Red House, Cattaraugus County, which is 0.7 mile upstream from Meeting Run and at mile 227.7.

DRAINAGE AREA . -- 1,690 square miles

Records of discharge for RECORDS Affildable.—Chemical analyses: October 1953 to September 1955.

Chloride concentrations: October 1953 to September 1955.

Chloride concentrations: October 1953 to September 1955.

Water temperatures: October 1953 to September 1955.

EXTREMES: 1954-55.—1958-01495 shaximum, 650 ppm Cort. 1-3, 6-9; minimum, 75 ppm Mar. 1-10.

EXTREMES: 1954-55.—1958-01495 shaximum, 670 ppm Sept. 26; minimum, 110 ppm Mar. 1-10, 11-14.

Specific conductance: Maximum, 877 ppm Sept. 26; minimum, 110 ppm Mar. 1-10, 11-14.

EXTREMES: 1953-55.—1958-01495 shaximum, 876 ppm Sept. 26; minimum, 110 ppm Mar. 1-10, 11-14.

EXTREMES: 1953-55.—1958-01495 shaximum, 876 ppm Sept. 26; ppm Mar. 2-5, 1954; minimum, 75 ppm Mar. 1-10, 1155.

EXTREMES: 1953-55.—1958-01495 shaximum, 876 ppm Sept. 26, 1955; minimum, 110 minimum, 77 ppm Mar. 1-10, 1155.

Specific conductance: Maximum alily, 1,510 minimum, 12 ppm Mar. 1,10 minimum, 10 minimum, 11 ppm Mar. 1-10, 1155.

Specific conductance: Maximum alily, 1,510 minimum, 12 ppm Mar. 11, 1955.

Water temperatures: Maximum, 876 ppm Sept. 26, 1955; minimum, 11 ppm Mar. 11, 1955.

Water temperatures: Maximum, 878 ppm Sept. 26, 1955; minimum, 11 ppm Mar. 11, 1955.

REMARKS.—Records of specific conductance of daily samples available in Quality of Water Branch district office, Albany, N. Y. Water temperatures: Maximum sept. 26, 1951, minimum, 11 ppm Mar. 11, 1955.

Chemical analyses. in parts per million. water year October 1954 to September 1955

Date of collection	Mean	Silica	Iron	Cal-	Mag- ne-	Sodium	Po- tas-	Bicar-	Sulfate	Chio	Fluo-	Nitrate	Dissolved solids (residue	Hardness as CaCO ₃	ness aCO _s	Specific conduct-	1	110	Oxygen	ned
אמם מו במובבנומו	(cfs)	(SiO ₂)	(Fe)	(Ca)	Sium (Mg)	(Na)	Sium (K)	(нсо			(F)	(NO ₃)		Total	Non- carbon- ate	(micro- mhos at 25°C)	pa	COTOL	Unfil- tered	Fil- tered
Oct. 1-3, 6-9, 1954	283	6.3	1	09	10	114	3.5		36	240	0.3	2.6	699	192	119	1,040	7.2	35	7.1	3.3
Oct. 4-5, 10		:	18	:	:		66		88	202	!	2.8	1	174	106	887	7.3	;	:	;
Oct. 11-15	339	4.	3 :	29	9.4	66	2.4	87	33	223	: ~	1 2	578	188	111	940	7.3	27	6	3.7
Oct. 16-20		;	1	;	;		33		8	8		4.	1	99	\$	295	6.7	: 1	; ;	; ;
Oct. 11-20		;	. 21	;	:	!	· -	_	-	:	-		:	;	;	;	;	;	;	;
Oct. 21-31		5.2	.21	33	6.3	4	2.3		19	100	ŝ.	1.2	263	111	99	492	7.1	c	2.3	1.5
Nov. 1-4.		1	1	:	1	•	. 53	9	14	110	-	~	;	108	g:	527	7.6	;		ì
Nov. 5-10	1,360	4.5	1	26	4.7	35	1.6	9 46	14	75	9.	. o,	212	3	#	376	7.2	2	2.2	1.2
NOv. 1-10		;		;	;	;	•		-		;	;	;	1	1	1	1	;	!	}
Nov. 11-16.		4.5	1	21	4.9	38	1.7		19		۳.	e.	220	88	47	397	7.5	es	3.8	1.0
NOV. 17, 19, 20		:	1 :	:	:	_	4	09		_	:	:	;	108	33	498	7.7	;	;	;
Nov. 21-30.	1,040	. 4.	2.2	36	5.1	38	1.7	: 49	12	: 88	1 9	101	227	: %	: 49	419	1.4	65	14	, 6
Dec 1-10			5	ĉ	-		-		-		_			: :	•				,	: '
Dec. 11-14		; ;	? !	;	; ;		- 22	- ‡ 4	2 2	- 6	۹ ۱		217	5 2	\$ 4	200	 . 4	6	9 :	٠,
Dec. 15-20	3,260	2.0	;	15	3,4	16	1.8		=	34	₹.	4.2	123	22	8	219	6.9	2	2.0	7.
Dec. 11-20		:	.22	ł	!	;	:	_	-		:	_	;	:	;	;	;	;	;	;
Dec. 21-28		5.3	t	20	8. 8.	22	1.4	35	77	2	9.	1.6	164	99	37	286	7.1	ıc,	1.1	œ.
Dec. 28-31		1	:	;	:		4.4	14	12	_	١	_	;	42	31	131	9.9	:	;	ì
Dec. 21-31		:	- 14	1	:	:	;	; -	; -	;	! -	;	:	!	- :	:	;	-	:	;

2.0	2.1	6 6 6 1 6 6 6 6 6 6	(4, 10, 1 %)
8.00	3.7.	1 01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3.1
1111111	4 6 2	24 a roa arer ro	υ4 υ4 υ
921 77 7 7 1 2 3 3 8 8 1 2 2 1 2 2 1	6.3 7.1 7.1 6.9	800 80 1.7.7.7	4.0.1.1.4.
144 228 306 374 458	489 447 329 344 178	101 101 155 138 187 243 240 197	222 294 380 380 467
32 1 2 1 1 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	884 42	118 119 120 120 120 130 140 140 140 140 140 140 140 140 140 14	28 44 32 24 45 45
38 57 71 71 101	114 92 76 72 72 74 14	28 30 4 1 4 2 30 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	56 72 72 91 99 110
149 247	119 1 1 233 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	75 111 112 113 113 113 113 113 113 113 113	221 221 184
22 2 20	284 28	921111111111111111111111111111111111111	1.5
	2141141	0,10,10,110,00,11	10,12,11 -
124 128 128 128 128 128 128 128 128 128 128	104 65	888 88 84448	38 55 78 78 98
15 17 18 22 22	23 20 20 118 17	264 145 1244 1	15 15 18 20 19
1 2 4 4 3 2 1 4 4 4 3 1 1 4 4 4 4 1 5 2 2 1 1 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	66 39 : 22 : 23	22 - 22 - 24 - 25 - 25 - 25 - 25 - 25 -	85 86 86 86 86 86
1:1		0 : : : : : : : : : : : : : : : : : : :	
20 31 34 - 48	51 54 31 39 15	6.2 12 12 11 11 17 17 18 18 18 18	
44 1	1.7	4 4 9 9 9 9 9	5.11
		11 11 11 11 11 11 11 11 11 11 11 11 11	
91.	8. 1 161 1 12	2 1	118118
44 0	112 4.3	3.1 3.1 1.9 1.9 1.1	2.5
7,140 2,340 1,300 974 710	742 1,650 1,400 1,970 5,280	15,300 12,200 5,640 6,680 3,910 2,000 2,420 3,400	2, 120 1, 460 1, 020 850
Jan. 1-10, 1955 Jan. 11-17 Jan. 18-20 Jan. 11-20 Jan. 21-29 Jan. 20-31	Feb. 1-10 Feb. 11 Feb. 11-20 Feb. 11-20 Feb. 22-28 Feb. 21-28	Mar. 1-10 Mar. 11-14 Mar. 15-20 Mar. 11-20 Mar. 20-31 Mar. 20-31 Mar. 21-31 Apr. 1-10 Apr. 21-30 Apr. 21-30	May 1-4 May 5-10 May 1-10 May 11-18 May 11-20 May 11-20 May 11-23, 25, 28-29, 31

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OHIO RIVER MAIN STEM--Continued

ALLEGHENY RIVER AT RED HOUSE, N. Y.--Continued

١		_!																									1	}
	gen	Fil- tered	:	1 8	: '	3.0	2.3		* 0 * 6	: :	;	3.1	!	!	3.5	!	6.3	! :	4.		;	2.5	6	2 2	2.9	1	:	2.3
ĺ	Oxygen	Unfil- tered	:	4.4		. 4.	3.2	•	6.4	; ;	:	4.4	;	:	4.	;	4.6	;		; ;	;	4.7	-	. 67	3.	;	;	4.3
	,	Color	ß	ا ر	· ~ ·	- w	- 2	u	ם נם	ιO	:	ن	c	!	7	ıc	-	: '	- :	2 0	: :	7			~~	;	:	7
	;	hd	7.2	. 4		7.8	7.2			7.3	:	9.6	8.2	1	7.2	7.5	7.3	1 3			: ;	7.3	4	. 7	4.	7.5	:	-
	Specific conduct-	(micro- mhos at 25°C)	583	562	849	269	100	200	983	689	;	834	1, 220	:	836	1,060	189	1 ;	168	481	;	654	899	988	935	1,510	:	515
	ess 30°	Non- carbon- ate	104	: 6	25.	2 29	78	9	0 6	8	;	92	130	:	86	119	92	: :	\$ 6	8 6	1	73	40	2 6	101	196	:	99
Continued	Hardness as CaCO ₃	Total	160	121	128	120	142	9	175	120	;	155	214	;	164	180	136	1 ;	14.	3 5	: :	128	180	174	176	277	;	107
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	Dissolved solids	on evap- oration at 180°C)	1	: 88	1	318	380	9	566	380	;	518	;	!	410	1	391	1 5	442	286	-	387	470	482	518	;	:	296
to Septe	Vitrate	(NO ₃)	1.5	1.8			1.0	-	0	1.0	;	1.4	1.0	:	8	9.	9.	;	- - -	1 6	: :	6.		-	1.2	2.1	:	1.5
er 1954		ride (F)		0.1	; ;	; e?	~	•		! !	1	4.	!	:	;	;	;	;	;	: ;	1	α.	-	-	: -:	!	:	0.2
ear Octob		CCI)	130	124	201	125	150		220	143	;	174	282	:	189	255	146	: ;	174	. 6	: ;	143	185	208	214	376	:	111
, water y	Sulfate	(30°)	22	: 17	202	2 2	25	6	3.5	24	;	82	40	:	29	37	22	: :	87.6	28	1	22	86	3 ==	ຣ	49	:	22
er million	Bicar-	bonate (HCO ₃)	69	92	8	52	7.8	. 8	93	32	;	b110	102	;	80	8	74	; ;	9 5	2 5	; ;	67	8	8 6	85	66	:	28
parts p	Po- tas-	sium (K)		1.6	;	1.7	2.0		7 2	2.3	;	2.7	3.1	1	2.4	3.5	2.5	1 ;		2 2	1	2.2		. 4	2.4		:	1.9
nalyses, in	Sodium	(Na)	84	- 29	102	62	7.3		112	2	;	96	152	!	94	132	22	:	4:	4.8	;	89	04	103	106	178	;	55
mical a	Mag- ne-	sium (Mg)		1 6.	1	6.7	.5.	-	11	=	;	= :	8	:	8.9	14	89	;		2 0	; ;	9.3	4	4	01	;	;	6.6
Che	Cal-	Cium (Ca)	:	37	;	37	- 43	4	25	42	:	44	26	:	51	53	41	۱ ;	9 8	3 2	:	36	48	2.5	24	;	:	33
	Iron	(Fe)	11	S :	1	1 1	1.2	ę	4 :	ł	. 16	;	; 8	87.	;	;	()	98.	;	; ;	. 52	. 22	14	17	1	;	8	0.19
	Silica	(SiO ₂)	1	2.8	1	3.6	7.4	2	5 =	6.8	1	4.	:	:	6.7		0.7	1 ;			-	3.0	7	4	3.3	1	:	7.5
	Mean	discharge (cfs)	831	451	420	453	274		204							461				651		395			200		:	2,030
		Date of collection	May 24, 26, 30, 1955.	May 21-31 June 1-9	June 10.	June 13, 14-20	June 11-20	Tulw 1 10	July 11-12, 17-20.	July 13-16	July 11-20	July 21-24, 27-31	July 25, 26.	3mg 21-91	Aug. 1-4	Aug. 5-10	Aug. 6-9	Aug. 1-10	Aug. 11-14.	Aug. 18-20	Aug. 11-20.	Aug. 21-30	Sept 1-10	Sept. 11-20	Sept. 21-25, 27-30	Sept. 26	Sept. 21-30	Average

a includes equivalent of 3 parts per million of carbonate (CO₃). b includes equivalent of 7 parts per million of carbonate (CO₃).

OHIO RIVER MAIN STEM--Continued

ALLEGHENY RIVER AT RED HOUSE, N. Y.--Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 5 p.m./

									_	т		T
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	44	36	36	32	37	44	62	64	72	83	79
2	69	42	35	37	32	37	45	63	65	76	83	72
3	70	42	34	37	32	37	46	65	68	79	83	73
4	65	41	34	37	32	40	47	67	70	81	78	73
5	65	40	33	38	32	51	48	66	70	83	81	73
6	63	38	33	38	32	39	46	64	75	80	81	73
7	56	40	33	37	32	34	48	64	70	81	82	70
8	54	42	33	35	32	34	52	62	64	80	80	69
9	55	42	33	36	33	37	50	57	65	81	80	69
10	58	43	34	37	33	41	51	55	68	82	80	72
11	62	42	34	34	32	44	52	57	65	79	79	69
12	64	43	34	35	32	46	56	60	66	78	76	66
13	65	43	34	34	32	44	54	63	58	78	69	66
14	67	43	35	34	32	45	54	64	58	78	71	67
15	57	43	35	33	33	45	56	66	64	80	74	71
16	53	44	36	33	33	44	54	68	70	78	79	73
17	52	47	35	33	32	43	56	66	74	82	80	73
18	52	51	35	32	32	43	58	64	76	78	79	76
19	50	54	35	32	33	43	62	65	78	80	82	76
20	49	50	33	32	33	44	62 62	64	78	80	82	74
21	50	47	33	32	35	42	62	65	75	80	82	67
22	52	47	33	33	36	41	61	67	74	82	76	62
23	53	46	34	34	35	39	61	68	72	76	75	58
24	54	45	33	35	34	40	57	73	72	75	74	59
25	56	43	33	33	35	41	57 53	71	70	79	75	60
26	53	42	34	33	35	40	50	68	68	78	75	61
27	53	42	34	32	36	36	52	72	67	81	73	60
28	52	43	36	32	37	34	53	73	73	79	73	62
29	49	41	36	32		36	55	70	76	81		65
30	48	39	35	32		39	57	65	71	81	75	60
31	44		36	32		44		62		82	73	
Aver-	57	44	34	34	33	41	53	65	69	79	78	68

MONONGAHELA RIVER BASIN

TYGART RIVER AT ELKINS, W. VA.

LOCATION.--At city water plant, at Elkins, Randolph County, 2½ miles upstream from gaging station near Elkins, and 4 miles upstream from Leading Creek.

DRAINAGE AREA.--268 square miles above water plant, 272 square miles above gaging station. RECORDS AVAILABLE.--Water temperatures: January 1947 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 82°F on several days durin; July and August; minimum, freezing point Dec. 26, Jan. 29.

EXTREMES, 1947-55.--Water temperatures: Maximum, 92°F July 22, 1952; minimum, freezing point on many days during winter months.

REMARKS.--No appreciable inflow between water plant and gaging station except during periods of heavy local rains. During flood periods part of flow is diverted around the water plant in a flood by-pass channel. Records of discharge for gaging station near Elkins for water year October 1954 to September 1955 given in WSP 13°5.

			emperati	re (F) o	t water, v	water yea:	Cotober	1954 to S	eptember	1955		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	45	39	41	34	47	52	61	68	76	82	77
2	68	43	38	40	36	49	51	63	69	80	82	72
3	66	42	38	40	34	46	53	67	70	78	81	72
4	70	40	37	40	36	49	55	70	72	78	82	74
5	70	40	38	40	36	45	54	71	74	82	82	74
6	66	42	36	41	38	43	53	68	76	80	81	76
7	62	41	35	40	39	41	48	70	74	80	78	76
8	57	40	37	38	40	41	50	68	69	82	76	77
9	56	40	36	40	42	44	54	67	68	81	76	74
10	58	39	35	38	43	47	56	69	68	74	80	76
11	60	41	34	37	36	51	57	62	67	76	79	72
12	62	43	36	36	34	54	60	68	65	77	78	70
13	65	43	37	34	33	53	61	62	62	78	76	72
14	67	44	36	34	33	53	62	58	60	80	76	74
15	57	47	38	34	34	50	60	60	63	80	78	76
16	57	47	37	36	36	48	64	64	64	81	78	77
17	50	50	37	34	34	48	64	65	66	79	77	77
18	54	52	38	33	36	43	65	66	70	80	78	72
19	52	54	36	34	40	41	66	66	74	79	79	70
20	52	52	35	34	40	47	68	67	76	80	80	72
21	50	51	34	34	38	50	64	70	77	80	78	72
22	51	50	35	33	44	49	65	71	77	81	76	72
23	50	47	35	34	44	50	65	71	78	82	79	70
24	51	46	34	33	42	51	64	70	76	78	79	66
25	52	42	34	34	44	47	61	71	75	76	78	66
26	52	40		34	43	42	55	73	74	78	79	- 65
27	52	40	34	33	45	37	52	76	74	80	78	66
28	51	46	36	33	45	38	55	77	75	79	77	67
29	50	40	40	32		41	60	74	73	80	78	67
30	48	36	39	33		42	62	70	76	81	79	66
31	44		39	33		42		66		80	78	==
Aver-	i	1			Į.		l					
age	57	44	a 36	36	39	46	59	68	71	79	79	72

a Includes estimated temperature, 32°F, on Dec. 26.

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA.

LOCATION.--At wire weight gage at bridge, 0.4 mile downstream from gaging station, 0.6 mile downstream from Dog Run, 0.4 mile upstream from Cherrycamp Run, and 1.4 miles northeast of Salem, Harrison County.

DRAINAGE AREA.--8.32 square miles (at gaging station).

RECORDS AVAILABLE.--Sediment records: October 1954 to September 1955, periodic.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385. Flow partially regulated by 4 detention reservoirs.

		Suspended	l sediment
Date	Discharge (cfs)	Mean concentration (ppm)	Discharge (tons per day)
Oct. 5, 1954	6.8	44	0.8
Oct. 6	6.1	24	.4
et. 11	1.1	27	.1
ct. 13	.6	17	(t)
ct. 15	16	168	7.2
ct. 15	46	684	85
ct. 15	238	707	454
ct. 15	375	1,730	1,750
ct. 15	515	1,090	1,520
et. 15	622	809	1,360
t. 15	720	745	1,450
ct. 15	622	382	641
ct. 15	362	193	189
ct. 16	165	131	58
ct. 16	70	58	11
ct. 18	6.8	. 20	.4
ct. 22 ct. 25	2.3	12	.1
ct. 27	1.1 72	17 847	.1 165
ct. 27	87	641	150
et. 27	87	333	78
ct. 27	62	89	l i5
ct. 28	33	44	3.9
ct. 28	20	36	1.9
ec. 14		834	
ec. 15		48	
ec. 29		2,680	
ec. 30		721	
an. 6, 1955	49 9.4	93 9	.2
eb. 2	89	429	103
eb. 2	77	232	48
eb. 3	28	24	1.8
eb. 6	541	1,800	2,630
eb. 6	515	797	1,110
eb. 7	112	71	21
eb. 17	77	52	11
eb. 27	130	133	47
eb. 27eb. 28	112 59	80 31	24 4.9
ar. 1	268	Į	j
ar. 1	338	1,420 1,670	1,030 1,520
ar. 1	325	1, 190	1,040
ar. 1	268	620	449
ar. 2	30	22	1.8
ar. 8	19	5	.2
r. 11	98	1, 270	336
ar. 11	108	706	206
ar. 15	11	1 2	.1
ır. 18	18	9	.4
r. 22	118	508	162
ar. 25	6.4	10	2
ar. 29	4.6	2	(t)
or. 5	2.2	4	(t)
or. 8	5.1	9	.1
or. 12	4.0	10	1
or. 15	36	46	4.5
or. 18	7.4	8	.2
r. 21	118	326	104
r. 21	108	218	64

t Less than 0.05 ton.

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA. -- Continued

Periodic determinations of suspended-sediment discharge, water year October 1954 to September 1955--Continued

		Suspended	sediment
Date	Discharge (cfs)	Mean concentration (ppm)	Discharge (tons per day)
Apr. 21, 1955	98	157	42
Apr. 26	58	72	11
pr. 29	9.0	12	. 3
May 3	3.0	8	.1
May 6	2.0	9	
May 10	.9	11	(t) (t)
fay 13	16	122	` 5.3
fay 17	2.6	23	. 2
fay 20	1.8	24	.1
une 1	.04	44	(t)
ane 7	150	5, 980	2, 420
ine 10	1.1	40	.1
ine 15	3.3	64	. 6
ine 18	.9	337	.8
une 21	.8	44	.1
une 24	.1	31	(t)
une 28	.1	21	(t)
uly 1	.02	24	(t)
uly 5	.01	34	(t)
ıly 8	.2	23	(t)
uly 9	38	164	17
uly 12	.9	18	(t)
uly 15	. 5	22	(t)
ılý 17	80	454	98
aly 17	72	3,260	634
uly 19	1.3	162	.6
uly 22	. 2	20	(t)
uly 26	3.0	29	.2
aly 29	1.0	27	.1
ug. 2	. 2	20	(t)
ug. 5	.08	23	(t)
ug. 9	. 06	22	(t)
ug. 16	.2	15	(t)
ug. 19	. 5	12	(t)
ug. 22	1,890	2,060	10, 500
ug. 22	1,890	806	4, 110
ug. 22	280	188	142
ug. 23	118	75	24
ug. 23	64	34	5.9
ug. 26	1.4	4	.2
ug. 30	.4	31	(t)
ept. 3	. 09	22	(t)
ept. 6	.10	14	(t)
ept. 13	. 09	19	(t)
ept. 20	. 08	20	(t)
ept. 23	. 09	19	(t)
ept. 23	. 09	30	(t)
ept. 27	. 3	13	(t)

t Less than 0.05 ton.

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA. --Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis. B. bottom withdrawal thus; D. decentation; P. pipette; S. siere; M. in native water; W. in distilled water; c. chemically dispersed; M. mechanically dispersed)

-	:	Methods of analysis	Ì	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSNM
			1.000												
			0.500	:	:	100	001	901	:	;	:	1	;	:	:
			0.350												
		llimeters	0, 250	:	901	86	86	66	:	:	;	;	1	:	
		ze, in mi	0.125	86	86	85	06	93	;	;	1	100	100	1	:
()		Percent finer than indicated size, in millimeters	0.062	84	94	83	81	87	8	100	901	66	66	100	100
arry despera	ediment	er than tr	0.031	68	87	74	12	18	8	94	97	86	8	86	608
THE CHAPTER	Suspended sediment	Percent fir	0.016	77	77	67	19	99	8	16	06	83	16	94	93
, mr,	Su	н	0.008	62	62	23	49	22	82	77	15	8	82	77	20
radem free			0.004	46	48	41	36	39	22	29	28	44	65	26	49
, Ulberto			0.003	32	34	32	28	29	25	4	44	29	47	41	င္တ
", in distinct water, c, encounty dispersed, m, incommenty dispersed,		Concentration of suspension	analyzed (ppm)	3,860	1,810	1,240	1,390	1,260	1,200	731	3.970	3,760	694	2,300	2, 760
H, 111 G		Concentration	of sample (ppm)	1, 730	2,680	721	161	620	1,270	208	5.980	5,980	454	3, 260	3,260
	Water	tem- per-	ature (°F)												
		Discharge (cfs)		375	;	:	515	268	86	118	150	150	80	12	72
		Time		2:45 p.m.	11:00 a.m.	1:00 a.m.	6:30 p.m.	12:00 m.	9:25 a.m.	9:40 a.m.	2:30 p.m.	2:30 p.m.	3:10 p.m.	4:15 p.m.	4:15 p.m.
	í	Date of collection		Oct. 15, 1954 2:45 p.m.	Dec. 29	Dec. 30	Feb. 6, 1955	Mar. 1	Mar. 11	Mar. 22	June 7	June 7	July 17	July 17	July 17

MONONGAHELA RIVER BASIN -- Continued

SHAVERS FORK AT PARSONS, W. VA.

LOCATION. -- On right bank at Armour Leather Company plant at Parsons, Tucker County, 0.3 mile upstream from confluence with Black Fork, and 0.4 mile downstream from gaging station.

Station.

DRAINAGE AREA.--214 square miles (at gaging station).

RECORDS AVAILABLE.--Water temperatures: October 1946 to December 1948, April to September 1949, January to September 1950, October 1952 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 88°F Sept. 3; minimum, 33°7 Jan. 28.

EXTREMES, 1946-50, 1952-55.--Water temperatures: Maximum, 88°F Aug. 31-Sept. 3, 1953, Sept. 3, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Measurements are made at the water intake of Armour Leather Company. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71		38		34	45	47		64	75	82	71
2			37	l	34	45		59	64		83	69
3		42	36	41	34			63	64		84	
4	69	41		41	34	44	48	66			82	
5	70	41		42			50	66		72	82	
6	68		38	46			52	64	70	75		70
7	62		36	44	34	42	50			76		71
8	55	42	35		35	40			68	76	76	69
9		42	36		36	43		62	65		73	69
10		42	34	39				63	64		72	
11	62	41		38	40	48	54	64		75	77	
12	66	43		38			56	64		76	79	68
13	67		36	36			58	66	62	76		65
14	69		38	34	34	49	61			76		63
15	68	43	38		34	50	60			78	70	67
16		45	38		34	49		60			72	66
17		51	36	34		47		61			73	
18		53		34	34	45	62	60		81	70	
19		54		34			65	61		80	66	71
20	50		36	34			62	63		80		68
21	52		35	34	41	49	64			82		66
22	52	57	34		43	51	62			81	71	72
23		45	34		42	44		65			72	70
24		46		34		44		70			71	
25	52			34	39	42	61	72		75	69	
26	53	46		34			58	69		78	69	64
27	55		34	34			52	69	65	79		61
28	52		37	34	43	36	52		67	82		65
29			40			38	53		71	82	74	66
30		40	42			39			73		76	67
31				34		44		64			76	
Aver-												
age												

MONONGAHELA RIVER BASIN -- Continued

CHEAT RIVER AT LAKE LYNN, PA.

LOCATION. --At the Lake Lynn hydroelectric plant of the West Penn Power Company at Lake Lynn, Fayette County, 3 miles upstream from mouth, and 13.8 miles downstream from gaging station near Pisgah, W. Va.

RAINAGE AREA. --1,411 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1948 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 85°F Aug. 6; minimum, 33°F Feb. 2.

EXTREMES, 1948-55. --Water temperatures: Maximum, 85°F July 30, 1949, July 28, 1952, Aug. 6, 1955; minimum, 33°F on several days during winter months.

REMARKS. --Temperature records furnished by the West Penn Power Company. Measurements are made as water passes through hydroelectric plant. Records of discharge for Cheat River near Pisgah for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	51	45	42	35	38	48	60	70	73	84	77
2	72	51	45	43	33	44	48	58	70	75	84	75
3	72	49	45	40	35	46	50	68	70	77	84	75
4	71	49	45	40	35	47	48	65	70	77	84	75
5	72	48	45	40	35	45	46	66	70	77	84	76
6	71	48	43	42	34	47	48	65	73	78	85	78
7	69	48	42	42	34	47	47	64	73	79	84	77
8	69	47	41	42	34	47	47	65	73	79	83	76
9	68	47	41	42	34	45	47	63	70	80	80	74
10	68	45	40	42	35	46	50	64	70	81	80	75
11	68	45	41	42	36	46	51	64	71	80	81	75
12	70	45	36	42	35	44	52	64	70	80	80	76
13	70	47	37	42	35	46	54	66	69	80	79	73
14	69	47	36	41	36	48	54	64	67	80	79	72
15	69	45	37	37	34	48	54	65	66	82	78	74
16		44	36	37	34	51	54	65	66	83	78	75
17	56	44	36	37	34	49	55	65	68	83	78	74
18	56	46	36	37	34	48	56	63	70	83	78	77
19	56	47	36	37	34	48	56	66	70	83	77	76
20	55	48	36	37	34	50	59	65	72	82	77	74
21	55	46	36	35	34	48	60	66	75	81	77	72
22	52	46	36	35	34	47	62	66	75	81	76	74
23	54	46	36	35	34	46	62	68	74	83	76	74
24	54	46	36	34	34	47	62	69	73	83	73	73
25	54	46	36	34	40	48	63	70	73	81	76	73
26	55	46	36	34	42	48	63	69	72	82	75	71
27	55	46	36	34	42	48	61	69	72	82	77	71
28	53	46	36	34	38	49	60	69	73	82	78	70
29	53	46	37	34		49	59	70	73	83	78 -	70
30	52	45	38	34		49	60	72	73	83	80	70
31	52		42	34		49		72		82	77	
Aver-	62	47	39	38	35	47	55	66	71	80	79	74

BEAVER RIVER BASIN

MAHONING RIVER AT LEAVITTSBURG, OHIO

	graph/
1955	thermo
water year October 1954 to September	~
Temperature (°F) of water, water y	Recorder with temperature attachment, co

										•																							1	
Ì	mber	min	07	89	2	2	20	2	88	67	3	2	89	99	99	29	69	202	02	: ;	20	8	6	9	8 8	8 8		5 6	7 6	9 5	25	္	:	29
	September	max	73 07	10	72	22	72	75	2	65	:	2	2	89	89	2	22	ŗ	22	: :	11	02	. 89	67	99	9		3 3	5 3	5 6	65	ဓ	:	69
-	August	min	92	7.1	77	92	7.7	91	74	7. E	2	7	74	2	2	69	72	1 15	22	15	15	7.6	22	74	. 62	: =	:	: :	2 5	9 1	72	2 1	73	74
	Aug	max	6 28	18	28	18	78	77	76	76	!	92	92	15	F	72	25	24	92	1	92	76	26	7.	7.	: 2:		9 5	3 5	2 1	2 5	2	73	7.5
	July	min	69	20	12	74	16	75	75	74	?	12	7.	73	5	74	52	2	92	92	75	74	7.	5	5	7	:		. F	2	2.2	2 :	12	74
	2	max	72	73	92	82	77	82	76	7,	2	82	77	92	92	92	77	0,2	62	62	18	78	2 2	2.92	22	- 12	2	2 2	2 5	- 1	2 2	2 2	6.	77
	June	min	64	65	99	67	68	2	49	62	3	8	61	28	28	24	9	9	99	69	20	92	2	2	2	£	4	5 6	0 9	3 8	29	P P	:	65
	2	max	99	89	69	2	71	70	10	64	3	25	64	61	28	62	99	9	2	73	13	64	7.	2.2	22	2		3 8	8 6	2 1	2 2	3	:	89
	May	min	57	9	62	64	64	62	8	20 20	3	22	22	9	9	09	90	£	9	9	9	ē	9	. 22	9	25		5 8	3 3	5 3	2 3	4.	63	61
	X	wew	61	49	65	67	65	64	62	9 6	3	8	61	19	62	49	99		63	62	25	8	. 6	99	8	8	4	3 8	8 8	33	98	88	98	64
	ŧ	uju	42	46	45	45	48	47	45	46	?	20	21	25	22	2	52	23	72	22	82	9	22	85	2.	22	6	3 2	5 6	31	¥ 2	8	١	25
	April	max	46	48	47	48	20	48	47	84 02	3	20	23	22	22	26	54	22	57	62	62	69	1 50	9	9	· E	1	5 6	2 4	81	24	3	:	54
	March	min	38	36	37	42	39	36	32	35.5	3	88	46	43	\$	41	41	40	40	38	40	4.1	4	: :	-	:		:	:		:	;	ŧ	;
	Ma	max	38	38	44	4	42	38	36	98 8	3	49	47	46	43	42	42	4	40	40	41	46	46	: :	;	:		1	:		1	:	:	;
	uary	min	33	34	33	33	33	33	33	33	3	33	33	33	33	33	33	23	83	35	32	33	33	8	8	8	Ę.	9 6	3 5	;	:	:	:	33
	February	max	34	34	34	34	33	33	33	333	3	33	83	33	33	33	33	8	33	88	33	67	8		£	200	36	3 6	3 6	;	:	;	:	33
	January	mln	35	37	37	37	38	37	35	35	3	35	35	34	34	34	34	34	34	34	34	33	33	8	3.5	35		5 6	† 7	5 7	45.	5	2	35
	Jan	xeu	37	38	38	38	39	38	37	35	3	35	32	35	34	34	34	34	34	34	34	34	82	3.	75	34		5 6	5 7	5	4.	* :	34	35
	mber	min	38	38	37	37	36	35	35	35	3	32	32	32	32	32	35	E.	32	32	34	34	34	8	8	8	6	3 6	3 6	3 6	3.5	÷ 5	~	35
-1	December	max	39	38	88	37	37	36	35	35	3	35	35	35	35	35	35	5	36	36	35	34	35	34		8		3 3	* °	3 6	500	8 8	5	36
	November	mtn	48	46	45	45	44	44	44	44	:	44	44	44	44	4	44	44	46	48	48	47	5	4	44	43	5	7 -	7 9	2 :	9 6	R C	:	44
	Nove	max	50 49	48	46	46	45	44	44	44 44	:	44	44	44	44	45	44	46	48	48	48	48	47	4	44	44	43	? ?	41		4	\$:	45
	ber	min	89 29	69	88	8	61	28	28	28	}	9	63	49	64	20	51	20	20	22	22	53	23	23	3	22	2	2 12	3 2	5 6	8	3 5	g	57
	Octob	max	69	02	69	89	63	61	22	28	;	63	64	92	65	64	26	51	51	52	53	75	75	54	75	Z				3	¥ 2	3 2	27	59
	Dow	G A	12.	3	4		9	7	8	10		11	12	13	14	15	16	17	18	19	20	21	22	23.	24	25.	26	27	28	96	30	21		Average
•		,																						-	-					-				

BEAVER RIVER BASIN -- Continued

MAHONING RIVER AT LOWELLVILLE, OHIO

LOCATION.—Temperature recorder at gaging station on left bank 300 feet upstream from Washington Street Bridge at Lowellville, Mahoning County, In all bufferam from Ohio-Pennsylvania State line, and 3 miles downstream from Yellow Creek.

BAINAGE ARABE.—Chemical analyses: October 1951 to September 1953.

RECORD ANGLABLE.—Chemical analyses: October 1951 to September 1954, incomplete, October 1991 to September 1955.

EXTREMES 1954-55.—Water temperatures: Maximum, 112°F Aug. 19; minimum, 34°F Feb. 12.

EXTREMES 1954-55.—Water temperatures: Maximum, 112°F Aug. 19; 1955; minimum, freezing point Dec. 5, 1950

EXTREMES 1954-55.—Water temperatures waximum, 112°F Aug. 19; 1955; minimum, freezing point Dec. 5, 1950

EXTREMES 1954-55.—Water temperatures waximum, 112°F Aug. 113°F Red 113°F Aug.

Temperature (°F) of water, water year October 1954 to September 1955

1																																	-	١
	mber	min	92	85	83	8	96	96	97	8	94	97	92	85	91	83	97	100	86	6	96	92	93	93	88	6	68	93	83	85	92	97	:	94
	September	max	66	5	102	5	105	107	104	102	101	104	97	101	101	103	108	109	109	102	105	103	101	101	86	96	66	86	101	5	103	104	;	102
	August	uju	06	93	92	92	94	94	87	98	91	88	82	92	98	82	88	95	66	66	8	100	94	95	94	93	94	94	86	82	91	96	93	83
	Aug	max	102	104	104	103	108	104	96	66	66	104	96	104	66	90	101	108	60	108	112	110	103	66	101	102	103	106	102	66	105	103	102	103
	y.	uţuı		:	:	1	;	;	1	;	ļ	1	ł	;	;	;	1	1	;	!	95	93	96	95	96	89	81	88	92	95	8	95	26	1
	July	max	:	;	1	;	;	;	1	:	;	1	1	:	1	;	1	;	;	:	901	106	101	106	<u>2</u>	96	100	103	101	104	106	102	101	:
	e	mim	8.4	68	85	92	8	91	91	42	42	92	82	82	28	11	42	81	68	88	94	94	;	1	;	:	:	;	:	:	:	:	:	:
	June	max	66	<u>=</u>	104	5	86	102	97	85	83	82	96	91	8.1	- 82	98	26	50	100	106	106	;	;	:	;	ł	ł	;	;	;	:	:	;
graph/		min	10	74	81	85	81	87	98	80	- 62	82	83	82	68	87	84	22		84	88	90	90	95	84	84	81	46	82	92	88	82	85	84
therm	May	max	83	88	85	86	86	96	26	91	68	98	94	66	94	96	92	86	6	96	96	102	104	66	66	92	91	98	97	901	97	91	8	92
ctuated	_	mim 1	20	24	62	9	99	92	12	69	92	42	43	82	18	8	2	65	5.5	99	65	63	49	62	69	-	62	57	22	26	62	02	:	67
y gasta	April	max	63	89	64	13	87	83	94	80	87	81	98	- 6	8	88	8	-12	13	92	80	F	99	72	52	11	5	62	8	69	12	- 08	;	92
even-da	ч	min n	42	40	39	45	45	45	41	40	41	44	46	43	45	44	48	45	42	46	46	49	52	43	42	44	47	45	45	46	48	41	47	45
nent, S	March	max n	48	44	46	47	47	- 46	45	42	48	20	21	25	49	53	25		48	200	26	24	99	22	47	49	25	20	49	23	22	24	28	20
attachr	.A	min n	-	;	;	-	64	21	24	29	29	49	35	34	35	39	48	- 26		- 64	48	44	40	37	36	35	41	41	41	42	-	-	;	46
erature	February	max m	 :	:	:	:	89	69	63	63	- 19	69	49	37	43	49	24	- 09	2.2	. 95	26	49	44	40	40	45	46	42	43	46	-	-	:	52
Recorder with temperature attachment, seven-day gas-actuated thermograph/	H	min m	44		_	_	54			42	_	_		_			29		- 42			!	:	;	-	-	8	61	24	;	:	_ :	-	
der wit	January	max m	H			_		_	_	47				_			63		24			-	-	-;				-11	_		-	_ :	-	
Recor	ı	-	-	65						62					_	-	62			25				22	_					_	_	45	2	28
	December	ıx min	L				67 6		_	-02	_			_			69			99	_		_	61	_		_		_			51 4	4	64 8
	-	n max	99	62	65	89	69	- 69	99	65	67	73	72	75	11	89	65	99	1,6	- 8	81	75	20	2		73	72	72	89	67	62	61	:	69
	November	x min	84	- 69	69	72	12	_	_	74			82	- 8	- 62	- 22	73	92		- 98	87	85	94	14	92	11	15		72	72	2	65		16
		n max	L	_						72				_				53		_					_				_			25		7.1
	October	-	Н			_	3 78	_		_	_	_		_					_	_						_			_		_	20	-	79 7
	٥	max	Ļ	108	_	_	:: ::		_	 8	-	·	·	_	- :	_	. 87					:		_	_				_	_	_	_	<u>.</u>	
	Daw	743	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16.	17	18	19	20	21	22	23	24	25	26.	27	38.	29.	30	31	Average

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.

LOCATION --About 1,000 feet upstream from dam, lock and dam 8 (mile 46.4) at Newell, Hancock County, 2,500 feet upstream from Rowes Run, and 3,300 feet

JOWNSTREAM from Muckmores Run.
DRAINAGE AREA. --23,500 square miles.
RECORDS AVAILABLE. --Chemical analyses:

RECORDS AVAILABLE. --Chemical analyses: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

Water temperatures: Maximum, 380 ppm Sept. 21-30; minimum, 113 ppm Jan. 1-10.

Hardness: Maximum, 186 ppm July 21-31; minimum, 66 ppm Jan. 1-10.

Specific conductance: Maximum daily, 69 minimum, 66 ppm July 21-31; minimum, 66 ppm July 21-31; minimum, 79e-zing point 1.10 micromhos Jan. 2.

Water temperatures: Maximum, 88*F July 31; minimum, freezing point Jan. 29.

REMARKS. --Acidity determined to phenolphihalein end point. Records of specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

1		Color	4 %	. ~			-					e	က	2	က	4	4	e	2	~	~		3 07	. ~	1 01	
Į		DHd C	5.9	2 2	8.6	6.3		6.2	9.3			6.3	. 1		5.5									1 10		-
	Specific conduct-	ance (micro- mhos at 25°C)	471					313						381	_	_	_				_	_			8448	-
	Α-	Poten- tial free	:	; ;	1	;	;	;	;	;	;	;	;	;	;	;	;	;	;		-		, ,	;	. ~	:
	Acidity (H+)	Imme- diate	;	; ;	;	;	;	;	;	;	;	:	:	;	:	;	:	;	1			;	· -	;		:
	ss	Non- carbon ate	156	717	106	96	114	97	98	22	- 19	8	108	124	98	28	E	22	8	25	3 =	1 5	3 8	3 6	151	-
	Hardness as CaCO,	Calcium, mag- c	160	120	110	107	121	105	92	83	99	87	115	129	89	82	75	18	83	į	1961	700	907	200	153	-
in parts per million, water year October 1954 to September 1955	Dissolved	(residue on evap- oration at 180°C)	317	176	205	197	224	194	173	143	113	151	211	a 242	164	148	125	140	149	101	100		196	0 2 6	007	
to Septe	Ni-	trate (NO ₃)	5.9	4 6	2.0	1.5	2.5	1.3	1.5	2.4	2,2	2.0	2.1	2.1	2.4	5,4	2.5	1.4	1.6		1 0		n c	4 0	0 5	-
er 1954	Fluo-	(F)	0.4		. 23	~	e.	. 2	~			.2	87	67	-	Ξ.	-	~		ć	9.0		N. C		7.0	?
ar Octob	Chlo-	ride (C1)	24	بر م	201	14	16	15	14	8.7	6.4	7.0	12	18	9	8.5	0.9	8	7.2	,	27 :	14	900	٠ : «	14	=
ater ye		fate (SO ₄)	168	118	120	108	125	107	94	83	63	98	118	141	16	62	69	83	88	,	3 5	2	ci i	3	149	2.7
llion, w	Bicar-	bonate (HCO ₃)	9	× ~	4	12	80	10	12	10	<u></u>	00	~	ď	4	-	ıcı	4	4	,	٥,	3 '	φ.	ъ.	4. 4	r
s per m	Po-	Sium (K)	3.7		2.5	6.1	2.9	2 3	1.8	1.5	1.4		2.4	20	2	8									9.0	
, in part	å	dium (Na)	27	15	12.	12	17	15	13		5.6		15	17	8	6 9	4	×	7.2		77	7.7	13	=:	61	77
Chemical analyses,	Mag-	sium (Mg)	13	10	. 6	8	9.3	8.5	7.5	6.2			8.8	2	-	9	8		9	,	n n	10	α, ι α, ι		= =	77
emical s	Cal-	cium (Ca)	43	333	50	50	33	28	26	23	18	24	31	5	24	22	5	200	22	į	7.7	45	8	56	36	42
Ch	Мап-	ga- nese (Mn)	1.0	6. 20	3 -	. 22	.95	7.5	2	52	43	2	. 87	84	. 2	. 62	9	. 2	. 62		1.	66.	. 97	. I	. 27	7.
		(Fe)	0.00	.05	10	8	.01	5	8	02	80	8	8	5	. 6	03	2		. 35		2.5	3	13	3	5.5	70.
	Alum-	inum (Al)	0.2	!	: :	- [1	1	;	0	0	: 1	;	۰			: -	. "			7.	1	;	1	{	1
		Silica (SiO ₂)	10	0.6	4	6.0	5.3	0.5	4	6.4	9	6	6.6	4	9		2		6		o i	8.0	9	9.6	9,0	0.0
	Mean	discharge (cfs)								_						_							-			- ;
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb 1-10	Feb. 11-20	Feb. 21-28	Mar 1-10	Mar 11-20	Mar. 21-31		Apr. 1-10	Apr. 11-20	Apr. 21-30	May 1-10	May 11-20	May 21-31

a Includes 0. 11 parts per million zinc.

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152 114 122 153 177 177	173 134 147 158 177	123
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		0.3
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June 1-10, 1955 June 11-20 June 21-30 July 11-20 July 11-20 July 21-31	Aug. 11-20. Aug. 21-31. Sept. 1-10. Sept. 11-20. Sept. 21-30.	Time-weighted average

## OHIO RIVER MAIN STEM -- Continued

## OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.--Continued

## Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at varying hours/

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	53	45	45	36	46	55	60	72	78	87	78
2	74	54	47	46	36	44	48	64	74	80	87	78
3	74	52	43	44	38	48	46	66	75	80	82	78
4	74	49	43	42	35	49	49	65	75	81	82	79
5	74	49	42	42	37	46	51	68	76	81	82	78
6	72	49	40	43	38	49	53	68	75	82	87	79
7	69	48	39	43	36	48	50	69	76	82		78
8	67	50	39	44	37	49	51	65	71	82	84	77
9	67	47	38	44	39	48	51	65	65	81	85	78
10	66	48	39	38	39	48	55	66	70	80	86	78
11	68	46	39	38	38	48	55	66	68	80	70	77
12	68	47	38	42	34	48	57	68	69	82	70	75
13	65	49	39	38	34	51	58	67	67	85	69	77
14	70	49	39	37	35	50	59	68	67	85	82	76
15	67	48	39	36	37	48	59	70	68	85	79	77
16	60	48	40	36	36	47	60	70	69	85	. 79	77
17	58	49	40	36	37	42	64	68	70	86	79	79
18	56	50	38	36	37	47	65 65	70	74	84	81	78
19	56	51	39	37	40	47	65	68	76	83	81	78
20	55	50	38	36	40	45	65	71	75	83	83	78
21	54	50	37	36	42	45	64	72	75	85	80	77
22	55	50	35	37	41	50	65	72	74	83		78
23	56	50	38	37	40	45	65	72	75	83	80	70
24	57	51	37	38	36	47	66	73	75	84	79	74
25	55	51	37	38	38	46	64	75	74	84	79	74
26	55	47	38	38	39	41	63	76	76	84	79	74
27	55	47	38	35	42	40	60	76	75	84	79	
28	57	47	40	34	46	46	60	75	75	84	80	73
29	55	46	45	32		44	61	74	77	86	81	73
30	55	46	45	33		39	64	71	78		85	73
31	55		42	34		38		71		88	76	
ver-												
age	63	49	40	39	38	46	58	69	73	83	80	77

## MUSKINGUM RIVER BASIN

# WALHONDING RIVER BELOW MOHAWK DAM, AT NELLIE, OHIO

LOCATION. --At gaging station at bridge on State Highway 79 at Nellie, Coshocton County, half a mile upstream from Mohawk Creek and 14 miles downstream from Mohawk Dam.

PROTRICE AREA COCTOBER 1953 to September 1955.

**RECORDS AVAILABLE.-Chemical analyses: October 1953 to September 1955.

**RECORDS AVAILABLE.-Chemical analyses: October 1953 to September 1955.

**Water temperatures: October 1953 to September 1955.

**Water temperatures: October 1953 to September 1955.

**Bardness: Maximum, 316 ppm Oct. 21-31; minimum daily, 192 micromhos Mar. 22.

**Bardness: Maximum, 321 ppm Nov. 22.-30; minimum, 11-20, 1954; minimum daily, 521 micromhos Peb. 1; minimum daily, 192 micromhos Mar. 22.

**Specific conductance: Maximum daily, 521 minimum, 11-20, 1954; minimum daily, 192 micromhos Mar. 22-28, 1955.

**Specific conductance: Maximum daily, 521 minimum, 107 ppm Mar. 22-28, 1955.

**Specific conductance: Maximum daily, 557 micromhos Jan. 11-20, 1954; minimum daily, 192 micromhos Mar. 22, 1955.

**Specific conductance: Maximum daily, 557 minimum, freezing point on many days during winter months.

**Mater temperatures: Maximum daily, 557 minimum, freezing point on many days during winter months.

**RAMARS.-Heacocrafe of Specific conductance of daily samples available in district office at Columbus, Ohlo. Records of green of the per 1955 given in WSP 1385. Flow regulated by Mohicanville, Charles Mill, pleasant Hill, and Mohawk Reservoirs. Flow affected by ice De.: 8-9, 20-27, Jan. 19 to Feb. 4.

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		Color	-	7	4	4	4	മ	ĸ		. 0.	o	9	9	ß	ıo.	-	17	17	20
		Hď	8.1	6.7	8.1	8.0	8.0	8.1	8	. ~	8	8.2	8.1	8.1	7.8	7.7	7.6	7.5	7.5	7.3
	Specific conduct-	ance (micro- mhos at 25°C)	459	415	471	487	483	486	483	478	475	366	365	429	480	484	368	265	317	292
	ness CO,	Non- carbon- ate	82	24	22	57	89	8	89	9	29	61	83	42	12	89	63	2 2	19	44
	Hardness as CaCO,	Calcium, mag- nestum	210	186	213	228	228	231	227	220	220	167	170	202	227	221	164	118	143	137
	Dissolved solids	(residue on evap- oration at 180°C)	282	260	316	302	291	293	295	273	298	228	226	267	290	288	218	163	194	180
er 1955		(NO ₃ )	2.7	4.4	4.5	2.7	2.4	2.9	6		9.6	8.8	8.0	6.7	5.2	4.4	8.2	8.8	9.6	8.9
to Septemb		Fluoride (F)	0.4	77.	m.	8.	2.	e.	67		. 69	2.	. 2	<b>2</b>	83	85	27	£.	8.	e.
water year October 1954 to September 1955	:	Cnloride (C1)	16	14	13	14	12	15	74	1 4	16	13	10	13	14	16	13	6.5	8.0	7.8
ter year Oc	;	Sulfate (SO ₂ )	63	29	89	67	67	99	3,6	9	9	53	29	2	73	69	22	40	21	ස
	Bicar-	bonate (HCO ₃ )	186	160	198	202	204	207	103	104	187	132	128	152	182	185	123	82	100	109
arts per n	Potas-	sium (K)	3.4	e.	2.9	2.5	2.4	2.6	2 4	9.4	1.6	2.1	1.8	1.8	2.3	2.4	2.2	2.3	2.3	2.6
Chemical analyses, in parts per million,		(Na)	16	12	17	15	14	14	5	7	14	9.2	7.1	9.2	11	13	8.5	4.9	5.6	5.3
mical ana	~aeW	nesium (Mg)	18	14	17	18	19	19	2	2 2	2 62	15	13	12	18	17	12	4.4	10	2
S	Cal-	ctum (Ca)	54	21	28	61	61	62	5	2	52	43	46	26	61	8	46	8	41	37
		(Fe)	0.02	.02	.02	10.	5	.02	6	3 8	.05	.03	.02	.03	8	80.	90.	8	9.	01.
	7.110	SiO ₂ )	13	17	200	8.5	89.	4. 3.	-	-	7.3	8.2	8.2	7.0	8.2	7.3	7.2	0.6	8.9	8.5
	Mean	discharge (cfs)	231									1,870				526	1,830	5, 702	3,940	3, 448
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-3, 5-10	Nov. 11-17	Nov. 22-30	Dec 1-10	Dec. 11-20	Dec. 21-27	Dec. 28-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-26, 28, 31	Feb. 1-8	Feb. 9-20	Feb. 21-24	Feb. 25-28	Mar. 1-7

MUSKINGUM RIVER BASIN--Continued

WALHONDING RIVER BELOW MOHAWK DAM, AT NELLIE, OHIO--Continued

ontinued	Dissolved Hardness S solids as CaCO ₃ cc	NHTATE (residue (NO ₂ ) on evapa.  (NO ₂ ) on evapa.  Oration mag. carbon- mhos at at 180°C) nestum at e 25°C)	.9 153 111 40 248 7.3	6.6 182 139 59 298 7.3 20	.8 144 107 38 235 7.3	.1 205 162 56 340 7.6	.8 220 178 58 372 77	.0 213 162 48 344 7.8	201	80 10 107	256 210 65 431 77	277 224 68 460 7.7	2.6 279 223 67 462 7.8 3	247 198 60 411 7.7	242 192 51 409	198 56	8 271 205 56	_	7 285 222 68 475	4.0 254 196 60 420 7	
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued		bonate (SO ₄ )		99 47						_	_		190 64	_		_		188 72		165 59	
in parts per million,	Potas-	(Na) (K)	3.4 1.9	_	_		7.1 1.8		9		 G.	_	12 1.7		9.6 2.5		67	15 2.6	2	11 2.3	
nical analyses,		cium nesium (Ca) (Mg)	30 8.7	38 11	28 8.7	_		43 13		-	-		56 20	-			_	55 20	-	52 16	
Che		(Fe)	0.15	11.	11.	90.	90.	10.	ā	5.	00.	8.	00.	.10	.01	.01	40.	.13	. 02	90.04	percent of runoff
		(SiO ₂ )	Ξ	8.8	8.0	8.4	7.0	8.7	•		2.0	9.9	11	6.6	10	9.6	10	7.7	8.7	8.8	
	Mean	discharge (cfs)						1,635	190	000	479	326	254	545	435	356	231	170	176	a 1,096	t of days and
		Date of collection	Mar. 8-13, 1955	Mar. 14-21	Mar. 22-28	Mar. 29-Apr. 10	Apr. 11-20	Apr. 21-30	Mar. 1 10	May 1-10	May 11-31	June 1-15	June 16-30	July 1-15	July 16-31	Aug. 1-15	Aug. 16-31	Sept. 1-15	Sept. 16-30	Time-weighted average ^a	a Represents 98 percent of days and 90

a Represents 98 percent of days and 99 percent of runoff.

## MUSKINGUM RIVER BASIN--Continued

## WALHONDING RIVER BELOW MOHAWK DAM, AT NELLIE, OHIO--Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 5 p. m. /

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	44	40		32	45	50 52	67	76	82	89	71 72
2	76	44	40		32	44	52	68	74	84	89	72
3	72	43	38		33	43	51	71	75	78	89	75
4	73	43	38		32	47	51	74	74	83	88	77
5	68	43	38		32	48	54	72	78	85	87	78
6	64	44	38		32	42	57	70	75	79	87	77
7	60	44	32	}	33	42	51	69	74	81	84	76
8	60	46	32		32	45	52	66	74	83	81	76
9	62	46	32		33	44	56	64	69	80	78	76
10	65	45	34		35	44	57	63	71	79	81	75
11	68	44	34	43	32	45	59	66	72	82	81	74
12	70	46	1	34	33	49	60	67	69	80	82	74
13	70	45	35	35	33	49	62	66	64	81	80	73
14	70	47	38	34	33	48	61	67	77	80	75	72
15	61	45	38	36	33	49	58	70	77	77	77	75
		1 70	30	30	33	49	36	10	''	l ''	''	1 "
16	57	44	38	35	33	47	61	72	78	81	81	77
17	56	44	39	34	34	45	64	74	79	82	82	78
18	53		40	32	34	45	63	70	81	83	84	78
19	53	)	39	33	35	44	64	68	81	83	87	78
20	52		32	33	34	50	66	73	80	83	85	76
21	54		32	33	38	49	62	74	79	84	83	71
22	55	45		33	38	48	64	75	79	84	77	72
23	55	45		32	38	46	63	76	76		77	71
24	56	44		33	39	44	64	74	77		78	70
25	55	45		32	39	46	60	70	71		79	68
26	56	43		33	42	43	56	74	73		79	64
27	57	39		32	44	40	58	77	75		79	69
28	54	41		32	44	39	60	76	78		77	67
29	53	40		"-		41	64	75	80		81	68
30	45	40		1		43	61	69	77		77	69
31	47					48		68			77	
Aver-	60	44	a 35		35	45	59	70	75		82	73
ec	ı	1	1	1	1	1	1		1	1		

age 60 44 a 35 - 35 a Includes estimated temperature, 32°F, Dec. 22-27.

### MUSKINGUM RIVER BASIN -- Continued

### MUSKINGUM RIVER AT DRESDEN, OHIO

MUSKINGUM RIVER AT DRESDEN, OHIO

LOCATION.--At gaging station at bridge on State Highway 208, half a mile east of Dresden, Muskingum County, and half a mile downstream from Wakatomika Creek.

DRAINAGE AREA.--5,982 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1952 to September 1955.

Sediment records: October 1952 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 88°F Aug. 4; minimum, freezing point on many days during December, January, and February.

Sediment concentrations: Maximum daily, 531 ppm Mar. 4; minimum daily, 1 ppm Nov. 11-12, 17.

Sediment loads: Maximum daily, 34,300 tons Mar. 4; minimum daily, 3 tors Nov. 12, 17.

EXTREMES, 1952-55.--Water temperatures: Maximum, 88°F Aug. 4, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 531 ppm Mar. 4, 1955; minimum daily, 1 ppm Dec. 28-27, 1952, Nov. 11-12, 17, 1954.

Sediment loads: Maximum daily, 34,300 tons Mar. 4, 1955; minimum daily, 3 tons Dec. 28-27, 1952, Nov. 7, 1953, Nov. 12, 17, 1954.

SEMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385. Flow regulated by 14 flood-control reservoirs. Flow affected by ice Jan. 27-Feb. 10.

Temperature (°F) of water, water year October 1954 to September 1955

			_O₁	nce-daily	measure	ment at ap	proximat	ely 11 a. i	n/			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Ju'y	Aug.	Sept.
1	72	47	40	39	-	40	49	61	65	74	82	72
2	75	44	39	40		46	50	60	65	75	84	72
3	73	44	37	39		41	49	62	<b>6</b> 6	76	82	72
4	72	42	37	41		44	52	64	67	76	88	73
5	70	43	38	43			49	67	68	78.	85	73
6	65	44	35	42		44	53	66	73	77	83	75
7	60	44	32	42		38	51	65	72	76	83	74
8	57	45	34	39		34	53	64	70	77	80	71
9	59	46	34	39	35	41	55	62	68	77	78	71
10	62	45	33	38	34	46	52	62	66	76	78	74
11	65	45	32	39	32	48	55	62	68	75	80	72
12	65	47	34	37		48	57	65	67	75	78	67
13	67	46	34	34	]	48	61	63	65	76	75	66
14	68	46	36	34		49	61	62	65	78	74	67
15	64	47	37	35		49	60	62	64	78	71	69
16	57	44	37	36	32	47	59	64	67	76	72	69
17	55	48	36	35	34	46	60	63		78	75	71
18	52	51	37	34	36	44	60	63	72	70	77	72
19	52	51	34	33	37	44	62		76	77	77	72
20	52	51		33	37	45	63	66	73	78	79	72
21	51	49	33	34	38	48	62	66	73	76	79	68
22	53	46	32	34	37	47	63	69	73	76	77	69
23	51	40	34	33	38	45	62	69	72	81	75	69
24	52	40	35	34	37	47	62	70	70	79	72	68
25	51	42	37	33	39	45	61	70	72	76	72	66
26	52	42	36	33	38	41	58	68	68	77	72	64
27	52	41	38		41	36	56	70	70	79	74	65
28	52	42	39		42	40	56	71	69		74	65
29	52	40	39			39	58	72	69	77	73	63
30	50	41	38			42	58	69	72	77	75	65
31	47		39			43		67		78	74	_==
Aver- age	59	45	36	a36	a 35	44	57	65	69	77	77	70

a Includes estimated temperature, 32°F on missing days.

## MUSKINGUM RIVER BASIN

## MUSKINGUM RIVER BASIN--Continued

## MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

	Γ	Ostabas			37		Т	December	
		October		ļ	November		ļ	December	
	Mean		d sediment	Moon	Suspende	ed sediment	Moon	Suspended	d sediment
Day	dis-	Mean		Mean dis-	Mean	<b>T</b>	Mean dis-	Mean	<b>M</b>
,	charge	concen-	Tons	charge	concen-	Tons	charge	concen-	Tons
	(cfs)	tration	per day	(cfs)	tration	per day	(cfs)	tration	per day
		(ppm)			(ppm)	uay		(ppm)	uay
1	468	26	33	1,870	11	55	2,280		Ŋ
2	484	28	36	1,740	8	38	2,350		11
3	725	23	45	1,620	2	9	2,220		11
4	860	22	51	1,620	2	9	2,100		11
5	860	20	46	1,560	2	8	1,980		e 25
	1 200				_		4 000		
6	1,320 1,860	44 48	157 241	1,510 1,510	2	8 8	1,860 1,680		
7	1,680	27	122	1,310	2 2	8	1,560		
8	1,370	17	63	1,400	3	11	1,560		
9 10	1,180	18	57	1,360	2	7	1,560	5	21
	_,			1,	_		-,	_	
11	1,070	20	58	1,310	1	4	1,560	2	8
12	1,010	16	44	1,260	1	3	1,560	2	8
13	1,040	15	42	1,220	3	10	1,560	2	8
14	1,340	19	69	1,190	4	13	1,560	2	8
15	2,420	64	s494	1,160	2	6	1,620	2	9
16	6,940	382	s7,640	ا میر ا				5	
17	10,600	288	8,240	1,140 1,120	2 1	6 3	2,040 2,540	10	28 68
18	10,400	162	4,550	1,120	2	6	3,020	16	130
19	9,700	139	3,640	1,100	8	24	4,830	56	730
20	10,100	170	4,640	1,100	8	24	6,200	77	1,290
				-,			-,-50		
21	9,480	128	3,280	1,160	8	25	5,660	53	810
22	7,940	93	1,990	1,190	6	19	4,350	34	399
23	6,200	91	1,520	1,220	4	13	3,900	23	242
24	5,490	71	1,050	1,270	4	14	3,750	20	202
25	4,510	57	694	1,290	4	14	3,450	15	140
26	3,520	44	418	1,360			3,300	13	116
27	2,740	38	281	1,400			3,160	10	85
28	2,420	32	209	1,510		e 20	3,160	15	128
29	2,220	25	150	1,680		""	5,840	90	s1,520
30	2,100	20	113	1,920			11,600	222	s 7, 260
31	1,980								
01	1,500	12	64				15,600	252	10,600
Total.	114,027		40,037	41,340		445	15,600	252	10,600 24,035
				41,340		445			
Total.	114,027	January	40,037		February	445	109, 310	 March	24,035
Total.	114,027	January	7 830	1,800	February	445	109,310	 March 127	5,450
1	114,027 15,100 14,100	January 192 147	7,830 5,600	1,800 2,200	February	]	109,310 15,900 19,300	 March 127 433	24,035 5,450 22,600
1	114,027 15,100 14,100 12,700	January 192 147 90	7,830 5,600 3,090	1,800 2,200 2,100	February	445 e 300	15,900 19,300 20,200	March 127 433 265	5,450 22,600 14,400
1 2 4	15, 100 14, 100 12, 700 10, 800	January 192 147 90 58	7,830 5,600 3,090 1,690	1,800 2,200 2,100 2,000	February	]	15,900 19,300 20,200 23,900	March 127 433 265 531	5,450 22,600 14,400 34,300
1	15, 100 14, 100 12, 700 10, 800 9, 040	January 192 147 90 58 44	7,830 5,600 3,090 1,690 1,070	1,800 2,200 2,100 2,000 2,000	February	]	15,900 19,300 20,200 23,900 24,500	March 127 433 265 531 452	5,450 22,600 14,400 34,300 29,900
1 2 3 4 5	15,100 14,100 12,700 10,800 9,040 9,260	January 192 147 90 58 44 56	7,830 5,600 3,090 1,690 1,070	1,800 2,200 2,100 2,000 2,000 2,000	February	e 300	15, 900 19, 300 20, 200 23, 900 24, 500 13, 100	March 127 433 265 531 452 260	5,450 22,600 14,400 34,300 29,900 a 9,200
1	15,100 14,100 12,700 10,800 9,040 9,260 13,400	January 192 147 90 58 44 56 136	7,830 5,600 3,090 1,690 1,070 1,400 4,920	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000	February	]	15, 900 19, 300 20, 200 23, 900 24, 500 13, 100	March 127 433 265 531 452 260 200	5,450 22,600 14,400 34,300 29,900 a9,200 a5,800
1	15,100 14,100 12,700 10,800 9,040 9,260 13,400 14,300	January 192 147 90 58 44 56 136 142	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500	February	e 300	15, 900 19, 300 20, 200 23, 900 24, 500 10, 800 10, 100		5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070
1	15,100 14,100 12,700 10,800 9,040 9,260 13,400 14,300 12,700	January  192 147 90 58 44 56 136 142 87	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000	February	e 300 e 800	15, 900 19, 300 20, 200 23, 900 24, 500 13, 100 10, 800 10, 100 19, 300	March 127 433 265 531 452 260 200 186 202	5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070 10,500
1	15,100 14,100 12,700 10,800 9,040 9,260 13,400 14,300	January 192 147 90 58 44 56 136 142	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500	February	e 300	15, 900 19, 300 20, 200 23, 900 24, 500 10, 800 10, 100		5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070
12345	15,100 14,100 12,700 10,800 9,040 9,260 13,400 14,300 12,700 10,400	January  192 147 90 58 44 56 136 142 87 53	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490	1,800 2,200 2,100 2,000 2,000 2,000 5,000 7,500 9,000 12,000	February	e 300  e 800  1,900 4,920	15, 900 19, 300 20, 200 23, 900 24, 500 13, 100 10, 100 19, 300 23, 600	127 433 265 531 452 260 200 186 202 171	24, 035 5, 450 22, 600 14, 400 34, 300 29, 900 a 9, 200 a 5, 800 5, 070 10, 500 10, 900
Total.  2	15, 100 14, 100 12, 700 10, 800 9, 040 9, 260 13, 400 14, 300 12, 700 10, 400 8, 820	January 192 147 90 58 44 56 136 142 87 53	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490	1,800 2,200 2,100 2,000 2,000 2,800 5,000 7,500 9,000 12,000	February	e 300  e 800  1,900 4,920 9,210	15, 900 19, 300 20, 200 23, 900 24, 500 10, 800 10, 100 19, 300 23, 600		24, 035 5, 450 22, 600 14, 400 34, 300 29, 900 a 9, 200 a 5, 800 5, 070 10, 500 10, 900
12345	15, 100 14, 100 12, 700 10, 800 9, 040 9, 040 13, 400 14, 300 12, 700 10, 400 8, 820 7, 540	January 192 147 90 58 44 56 136 142 87 53	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651	1,800 2,200 2,100 2,000 2,000 5,000 7,500 9,000 12,000	February	e 300  1,900 4,920 9,210 e 10,000	15, 900 19, 300 20, 200 23, 900 24, 500 10, 100 10, 100 19, 300 23, 600 24, 500 24, 500		5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070 10,500
Total.  1	15, 100 14, 100 12, 700 10, 800 9, 040 9, 260 13, 400 14, 300 12, 700 10, 400 8, 820	January 192 147 90 58 44 56 136 142 87 53	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 15,100	February	e 300 l,900 4,920 9,210 e 10,000 e 7,000	15, 900 19, 300 20, 200 23, 900 10, 100 10, 100 19, 300 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500		24,035 5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 10,900 13,000 23,500 11,800 9,580
1	114,027 15,100 14,100 12,700 10,800 9,040 9,260 13,400 12,700 10,400 8,820 7,540 6,580	January  192 147 90 58 44 56 136 142 87 53 41 32 28	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496	1,800 2,200 2,100 2,000 2,000 5,000 7,500 9,000 12,000	February	e 300  1,900 4,920 9,210 e 10,000	15, 900 19, 300 20, 200 23, 900 24, 500 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500		24,035 5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070 10,500 10,900 13,000 21,500 11,800
Total.  1	15, 100 14, 1027 15, 100 10, 800 9, 260 13, 400 14, 300 12, 700 10, 400 8, 820 7, 540 6, 580 5, 150	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 23	7,830 5,600 1,690 1,690 1,070 1,400 2,980 1,490 2,980 1,490 976 651 492 442 320	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 8,600	February	e 300 l, 900 1, 900 4, 920 9, 210 e 10, 000 e 7, 000 e 4, 000 e 2, 000	15, 900 19, 300 20, 200 23, 900 10, 100 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500	March 127 433 265 531 452 260 200 186 202 171 196 355 178 143 114	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 10,900 13,000 23,500 11,800 9,580 7,720
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,580 5,840 5,150	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 496 442 320 244	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 11,500 8,600 7,340	February 78 152 226 42	e 300 1,900 4,920 9,210 e 10,000 e 7,000 e 4,000 e 2,000 832	15, 900 19, 300 20, 200 23, 900 10, 800 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500		24, 035  5, 450 22, 600 14, 400 34, 300 29, 900 a 9, 200 a 5, 800 5, 070 10, 500 10, 900 13, 000 23, 500 11, 800 9, 580 7, 720 7, 140
Total.  1	114,027 15,100 14,100 12,700 10,800 9,040 9,280 13,400 12,700 10,400 8,820 7,540 6,560 6,560 6,584 4,510 4,200	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 23 20 15	7,830 5,690 1,690 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 442 320	1,800 2,200 2,100 2,000 2,000 2,000 5,000 7,500 9,000 12,000 15,100 17,400 15,100 11,500 8,600 7,340	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731	15, 900 19, 310 20, 200 23, 900 24, 500 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500		24,035 5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070 10,500 10,900 13,000 23,500 11,800 9,580 7,720 7,140 6,680
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,560 5,840 4,510 4,510 4,200 3,680	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 20 15 10	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 442 320 244 170 99	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 11,500 8,600 7,340 7,740 9,260	February	e 300 1,900 4,920 9,210 e10,000 e7,000 e4,000 e2,000 832 731 1,050	15, 900 19, 300 20, 200 23, 900 10, 800 10, 100 10, 100 19, 300 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 25, 100		24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 23,500 11,800 9,580 7,720 7,140 6,680 5,700
Total.  1	114,027 15,100 14,100 12,700 10,800 9,040 9,280 13,400 12,700 10,400 8,820 7,540 5,840 5,150 4,200 3,880 3,450	January 192 147 90 58 44 56 136 142 53 41 32 28 28 28 20 15 10 7	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 442 320 244 170 99 65	1,800 2,200 2,100 2,000 2,000 2,000 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570	15, 900 19, 310 20, 200 23, 900 24, 500 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 25, 100		24,035  5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 5,070 10,500 10,900 13,000 23,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,560 5,840 4,510 4,510 4,200 3,680	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 20 15 10	7, 830 5, 600 3, 090 1, 690 1, 070 1, 400 4, 920 5, 480 2, 980 1, 490 976 651 496 442 320 244 170 99 65	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 11,500 8,600 7,340 7,740 9,260	February	e 300 1,900 4,920 9,210 e10,000 e7,000 e4,000 e2,000 832 731 1,050	15, 900 19, 300 20, 200 23, 900 10, 800 10, 100 10, 100 19, 300 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 25, 100	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 108 83	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 23,500 11,800 9,580 7,720 7,140 6,680 5,700
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 14,300 12,700 10,400 8,820 7,540 6,560 5,840 5,150 4,200 3,680 3,450 3,450 3,230 3,020	January  192 147 90 58 44 56 136 142 87 53 41 32 28 28 23 20 15 10 7 8	7,830 5,600 3,090 1,680 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 4442 320 244 170 99 65 70	1,800 2,200 2,100 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 8,600 7,340 7,740 9,260 10,600 11,700	February  78 152 226 42 35 42 55 85	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680 4,750	15, 900 19, 300 20, 200 23, 900 10, 100 10, 800 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 26, 500 18, 200 11, 900 11, 900 11, 900 11, 900 11, 900 11, 900 11, 900 11, 900 11, 900 11, 900		24,035  5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 10,900 13,000 23,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150
Total.  1	114,027 15,100 14,100 12,700 10,800 9,040 9,260 13,400 14,300 10,400 8,820 7,540 6,560 5,800 5,150 4,510 4,200 3,450 3,450 3,230 3,020 2,950	January 192 147 90 58 44 56 136 142 53 41 32 28 28 23 20 15 10 7 8	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 496 442 320 244 170 99 95 70	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 12,000 15,100 15,100 15,100 15,100 17,400 15,100 11,500 7,740 7,740 9,260 10,600 11,700	February	e 300  1,900 4,920 9,210 e10,000 e7,000 e4,000 e2,000 832 731 1,050 1,570 2,680 4,750 18,700	15, 900 19, 300 20, 200 23, 900 10, 800 10, 100 11, 300 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 800 25, 100 26, 500 18, 200 16, 400		24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 12,700 10,400 12,700 10,400 8,820 7,540 6,580 5,840 5,150 4,510 4,200 4,200 3,450 3,450 3,230 3,230 3,230 2,950 2,950 2,950 2,950 2,950	January  192 147 90 58 44 56 136 142 87 53 41 32 28 28 23 20 15 10 7 8 8 9 8	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 498 442 320 244 170 98 65 70	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600 11,700 14,300 20,700 24,500	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680  4,750 18,700 19,700	15, 900 19, 300 20, 200 23, 900 10, 100 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 26, 500 18, 200 20, 500 14, 600 20, 500 23, 900	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 83 80 288 80 288 240	24,035  5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 10,900 11,800 12,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150 15,900
Total.  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,560 5,840 5,150 4,510 4,200 3,450 3,450 3,230 2,950 2,910 2,740	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 28 28 28 8 8 8	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 495 442 320 244 170 99 65 770 65 770 65 771 65 772 65	1,800 2,200 2,100 2,000 2,000 2,000 2,000 2,800 5,000 7,500 12,000 15,100 15,100 15,100 17,400 15,100 17,740 9,260 10,600 11,700 20,700 24,500 24,500	February  78 152 226 42 35 42 235 85 123 334 298 334 298 156	e 300  1,900 4,920 9,210 e10,000 e7,000 e4,000 e2,000 832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200	15, 900 19, 300 20, 200 23, 900 10, 100 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 26, 500 18, 200 20, 500 14, 600 20, 500 23, 900		24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 23,500 11,800 9,580 7,720  7,140 6,680 5,700 5,310 3,680 3,150 15,900 15,500
Total.  1	114,027 15,100 14,100 12,700 10,800 9,260 13,400 12,700 10,400 12,700 10,400 8,820 7,540 6,580 5,840 5,150 4,510 4,200 4,200 3,450 3,450 3,230 3,230 3,230 2,950 2,950 2,950 2,950 2,950	January  192 147 90 58 44 56 136 142 87 53 41 32 28 28 23 20 15 10 7 8 8 9 8	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 498 442 320 244 170 98 65 70	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600 11,700 14,300 20,700 24,500	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680  4,750 18,700 19,700	15, 900 19, 300 20, 200 23, 900 10, 800 10, 100 11, 300 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 24, 800 25, 100 26, 500 18, 200 16, 400	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 83 80 288 80 288 240	24,035  5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 10,900 11,800 12,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150 15,900
Total.  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 14,300 14,300 8,820 7,540 6,560 5,840 5,150 4,510 4,510 4,500 3,680 3,480 3,480 3,480 3,480 3,295 2,950 2,950 2,140 2,740	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 28 28 28 8 8 8	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 495 442 320 244 170 99 65 770 65 770 65 771 65 772 65	1,800 2,200 2,100 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 17,400 15,100 8,600 7,340 9,260 10,600 11,700 11,700 11,700 20,700 24,500 24,500 23,000	February  78 152 226 42 35 42 55 85 123 334 298 156 125	e 300  1,900 4,920  9,210 e10,000 e7,000 e2,000 832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200 7,700	15, 900 19, 300 20, 200 23, 900 10, 100 10, 800 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 21, 900 20, 500 18, 200 14, 600 20, 500 14, 600 20, 500 21, 900 22, 500 24, 500 22, 500 24, 500 22, 500 24, 500 22, 500 24, 500 22, 500 24, 500 25, 500 26, 500 27, 500 28, 500 29, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 500 20, 50	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 108 83 80 288 240 165 134	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 23,500 11,800 9,580 7,720  7,140 6,680 5,700 5,310 3,680 3,150 15,900 10,800 8,210
Total.  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,560 5,840 5,150 4,510 4,200 3,450 3,450 3,230 2,950 2,910 2,740	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 20 15 7 8 8 9 8 8 9 8 6 5	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 496 442 320 244 170 99 65 70 65 72 65	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 12,000 15,100 15,100 15,100 15,100 15,100 11,700 8,600 7,740 9,260 10,600 11,700 14,300 20,700 24,500 24,500 24,500 22,500	February  78 152 226 42 35 42 235 85 123 334 298 334 298 156	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200 7,700 5,810	15, 900 19, 310 20, 200 23, 900 10, 800 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 21, 900 20, 500 18, 200 16, 400 14, 600 20, 500 21, 900 22, 500 21, 900 21, 900 22, 500 21, 900 21, 900 22, 500 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 900 21, 90		24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150 15,500 10,800 8,210 7,700
Total.  1	114,027  15,100 14,100 12,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,580 5,840 5,150 4,200 3,450 3,230 3,020 2,810 2,740 2,740 2,540	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 23 20 15 10 7 8 8 9 9	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 442 320 244 170 98 65 70 65 65 72 65 65 70 65 65 70 65 65 70 65 70 65 70 65 70 65 70 65 70 70 70 70 70 70 70 70 70 70 70 70 70	1,800 2,200 2,100 2,000 2,000 2,000 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600 11,700 14,300 20,700 24,500 24,500 24,200 23,500	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e2,000 832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200 7,700	109,310 15,900 19,300 20,200 23,900 10,100 10,800 10,100 19,300 24,500 24,500 24,500 24,500 24,500 24,500 21,900 20,500 18,200 14,600 20,500 24,200 22,700 21,600 22,700	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 108 83 80 288 240 165 134	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 23,500 11,800 9,580 7,720  7,140 6,680 5,700 5,310 3,680 3,150 15,900 10,800 8,210
Total.  1	114,027  15,100 14,100 12,700 10,800 9,260 13,400 12,700 10,400 8,820 7,540 6,560 5,840 5,150 4,510 4,200 3,450 3,230 3,230 3,230 3,220 2,950 2,740 2,740 2,540 2,740 2,540 2,100 1,900	January  192 147 90 58 44 56 136 142 87 53 41 32 28 23 20 15 10 7 8 8 9 8 6 5 9 40	7,830 7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 498 442 320 244 170 99 65 70 70 65 72 61 44 37 62 248	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600 11,700 14,300 20,700 24,500 24,500 24,500 23,000 15,600 17,200 15,600	February	832 731 1,050 2,680 4,750 11,570 2,680 4,750 11,700 10,200 7,700 5,810 3,940 3,540	109, 310  15, 900 19, 300 20, 200 23, 900 24, 500 10, 100 19, 300 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 25, 100 20, 500 18, 200 21, 900 20, 500 18, 200 21, 900 22, 700 21, 600 22, 700 21, 600 20, 500 11, 600 20, 500 11, 600 20, 500 11, 700	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 83 80 288 240 165 134 132 101 883 80	24,035  5,450 22,600 14,400 34,300 29,900 a 9,200 a 5,800 10,900 13,000 23,500 11,800 9,580 7,720 7,140 6,680 5,700 13,680 3,150 15,900 10,800 8,210 7,700 5,590 4,560 3,820
Total  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,5840 5,540 5,150 4,510 4,200 3,450 3,450 3,250 2,810 2,740 2,740 2,540 2,100 1,900 1,700	January 192 147 90 58 44 56 136 142 87 53 41 32 28 28 28 28 28 29 15 7 8 8 9 8 6 5 9 40	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 2,980 1,490 976 651 496 442 320 244 170 98 65 70 65 65 72 65 65 70 65 65 70 65 65 70 65 70 65 70 65 70 65 70 65 70 70 70 70 70 70 70 70 70 70 70 70 70	1,800 2,200 2,100 2,000 2,000 2,000 2,000 15,000 17,500 12,000 15,100 15,100 15,100 15,100 11,500 7,740 7,740 9,260 10,600 11,700 24,500 20,700 24,500 23,000 17,200 20,500 17,200 15,600	February	e 300  1,900 4,920 9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200 7,700 5,810 3,990 3,540	109,310  15,900 19,300 20,200 23,900 10,100 10,800 10,100 19,300 23,600 24,500 24,500 24,500 24,500 24,500 24,500 24,500 22,700 18,200 16,400 14,600 20,500 23,900 24,200 22,700 21,600 20,500 19,900 17,700 21,600	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 108 83 80 288 240 165 134 132 101 83 80 80 80	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 10,500 10,500 11,800 23,500 11,800 9,580 7,720  7,140 6,680 5,700 5,310 3,680 3,150 15,500 10,800 8,210  7,700 5,590 4,560 3,820 3,370
Total  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 114,300 112,700 10,400 8,820 7,540 6,5840 5,840 5,840 3,230 3,230 3,250 2,810 2,740 2,540 2,740 2,540 2,740 2,540 1,700 1,700	January  192 147 90 58 44 56 136 142 87 53 41 32 28 23 20 15 10 7 8 8 9 8 6 5 9 40	7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 496 442 320 244 170 99 65 70 65 72 61 444 37 62 248 } e 250	1,800 2,200 2,100 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,740 9,260 10,600 11,700 14,300 20,700 24,500 24,200 23,000 20,500 17,200 15,600	February	e 300  1,900 4,920  9,210 e10,000 e7,000 e4,000 e2,000  832 731 1,050 1,570 2,680 4,750 18,700 19,700 10,200 7,700 5,810 3,990 3,540	15, 900 19, 310 20, 200 23, 900 10, 800 10, 800 10, 100 23, 600 24, 500 24, 500 24, 500 24, 500 24, 500 24, 500 21, 900 20, 500 18, 200 14, 600 20, 500 21, 900 21, 900 22, 700 21, 600 22, 700 21, 600 20, 500 17, 700 15, 600 12, 900	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 83 80 288 240 165 134 132 101 883 80	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 5,070 10,500 11,800 9,580 7,720 7,140 6,680 5,700 5,310 3,680 3,150 15,500 10,800 8,210 7,700 5,590 4,560 3,820 3,370 3,030
Total  1	114,027  15,100 14,100 112,700 10,800 9,260 13,400 14,300 10,400 8,820 7,540 6,5840 5,540 5,150 4,510 4,200 3,450 3,450 3,250 2,810 2,740 2,740 2,540 2,100 1,900 1,700	January  192 147 90 58 44 56 136 142 87 53 41 32 28 23 20 15 10 7 8 8 9 8 6 5 9 40	7,830 7,830 5,600 3,090 1,690 1,070 1,400 4,920 5,480 1,490 976 651 498 442 320 244 170 99 65 70 70 65 72 61 44 37 62 248	1,800 2,200 2,100 2,000 2,000 2,000 2,800 5,000 7,500 9,000 12,000 15,100 11,500 8,600 7,340 7,740 9,260 10,600 11,700 14,300 20,700 24,500 24,500 24,500 23,000 15,600 17,200 15,600	February	832 731 1,050 2,680 4,750 11,570 2,680 4,750 11,700 10,200 7,700 5,810 3,940 3,540	109,310  15,900 19,300 20,200 23,900 10,100 10,800 10,100 19,300 23,600 24,500 24,500 24,500 24,500 24,500 24,500 24,500 22,700 18,200 16,400 14,600 20,500 23,900 24,200 22,700 21,600 20,500 19,900 17,700 21,600	127 433 265 531 452 260 200 186 202 171 196 355 178 143 114 108 113 103 108 83 80 288 240 165 134 132 101 83 80 80 80	24,035  5,450 22,600 14,400 34,300 29,900 a9,200 a5,800 10,500 10,500 11,800 23,500 11,800 9,580 7,720  7,140 6,680 5,700 5,310 3,680 3,150 15,500 10,800 8,210  7,700 5,590 4,560 3,820 3,370

e Estimated. s Computed by subdividing day. a Computed from estimated concentration graph.

## MUSKINGUM RIVER BASIN--Continued

## MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

Main   Suspended sectiment   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main   Main			April			May		l T	June	
Day   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies   Chies			Suspended	d sediment			d sediment		Suspende	d sediment
Charge	Day			Tons		Mean	Tons		Mean	Tons
C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs)   C(rs									concen-	
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2. 10,400 80 2,250 6,200 43 720 1,880 9 46 3. 8,600 58 1,350 5,300 33 472 1,700 11 46 5. 6,740 42 764 4,290 25 380 1,500 12 46 6. 6,380 37 637 3,970 22 336 1,800 21 77 7. 6,200 38 636 3,850 32 327 1,880 21 77 8. 5,500 38 482 3,400 23 187 1,800 21 77 8. 5,500 38 482 3,400 23 187 1,800 21 77 8. 5,500 38 482 3,400 23 187 1,800 21 78 8. 5,600 38 482 3,400 23 18 183 1,700 22 101 10. 4,790 24 310 3,800 18 183 1,700 22 101 11. 4,450 22 255 3,800 12 18 183 1,700 22 101 11. 4,450 24 310 3,800 18 183 1,700 19 96 12. 4,450 24 275 3,800 12 18 185 1,700 19 96 13. 4,200 24 275 3,800 12 18 18 18 1,700 19 96 13. 4,200 24 275 3,800 12 18 85 1,700 19 87 14. 5,840 74 1,170 2,700 8 60 1,700 16 76 15. 7,540 76 1,550 2,650 8 57 1,820 16 79 17. 11,200 64 1,800 2,800 12 18 18 18 1,700 24 97 18. 1,400 20 2,202 2,850 18 18 18 18 1,700 19 96 17. 11,200 64 1,800 2,800 16 12 4 1,600 22 97 18. 1,400 60 102 3,202 2,850 18 18 18 1,700 19 96 17. 11,500 64 1,800 2,800 16 124 1,600 22 97 18. 1,400 65 1,800 2,800 16 124 1,600 22 97 19. 7,940 52 1,110 2,200 12 73 1,330 21 76 22. 9,480 84 2,150 2,200 8 49 1,350 14 47 21. 7,740 49 1,020 2,130 8 46 1,150 12 37 22. 9,480 84 2,150 2,200 8 48 1,150 12 37 23. 9,200 86 2,300 2,200 10 61 1,200 12 37 24. 9,700 67 1,750 2,200 12 73 1,330 21 77 25. 10,100 66 1,800 2,200 10 61 1,200 12 37 24. 9,700 67 1,750 2,200 12 71 1,330 14 50 25. 10,100 66 1,800 2,200 10 61 1,200 11 3 41 29. 11,500 80 2,480 52 1,500 30 4,400 15 1,000 1,100 13 41 29. 10,400 60 1,800 2,200 10 61 1,200 12 37 23. 9,200 86 2,300 2,200 10 61 1,200 12 37 24. 9,700 67 1,750 2,200 8 48 1,150 10 1,180 13 41 29. 11,500 80 2,480 80 2,480 15 100 1,180 13 41 29. 11,500 80 60 2,480 15 100 1,180 13 41 29. 11,500 80 60 2,480 15 100 1,180 13 41 29. 11,500 80 60 2,480 15 100 1,180 13 41 29. 11,500 80 60 2,480 15 100 1,180 13 41 29. 11,500 80 60 2,480 15 100 66 82 18 30 20. 7,300 80 60 2,000 10 60 1,000 80 10 10 65 10 10 10 10 10 10 10 10 10 10 10 10 10		11 700		2 180	7 340		031	2 060		44
3.	2	10.400		2,160	6,200			1,880		
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6. 6, 380 37 637 3, 970 22 236 1, 420 20 77 7. 6, 200 38 636 3, 860 23 227 1, 380 21 78 8. 5, 160 30 442 310 3, 440 18 183 1, 380 21 78 10. 4, 790 24 310 3, 380 18 183 1, 380 21 78 11. 4, 450 22 244 310 3, 380 18 183 1, 700 22 101 11. 4, 450 22 254 3, 140 17 144 1, 880 19 96 11. 4, 880 24 170 22 264 3, 140 17 144 1, 880 19 96 11. 4, 880 24 170 2, 880 18 80 1, 700 18 97 11. 5, 160 18 1, 700 18 18 183 1, 700 18 97 11. 6, 10, 600 102 2, 290 2, 880 18 80 1, 700 18 79 11. 10, 600 102 2, 290 2, 880 16 124 1, 160 18 79 11. 11, 200 64 1, 940 2, 880 16 124 1, 640 22 97 11. 11, 200 64 1, 940 2, 880 16 124 1, 640 22 97 11. 11, 200 64 1, 940 2, 880 16 124 1, 640 22 97 11. 11, 200 80 1, 800 18 19 96 11. 7, 740 48 1, 100 2, 200 12 73 1, 150 24 79 12. 7, 740 52 1, 110 2, 200 12 73 1, 150 12 73 12. 4, 9, 900 10 7, 700 11 10 33 12. 4, 900 10 7, 700 11 10 10 33 12. 4, 900 10 7, 700 11 10 10 33 12. 9, 900 10 7, 700 11 10 10 33 12. 9, 900 10 66 1, 800 2, 200 11 65 1, 300 14 47 12. 9, 900 10 10 10 10 10 10 10 10 10 10 10 10 1	4	7,540		1,060	4,790			1,590		
7. 6, 200 38 6 856 3, 600 23 227 1, 380 21 78 8. 5, 560 30 458 3, 440 21 195 1, 380 21 78 9. 5, 130 24 332 3, 380 18 163 1, 480 20 80 10. 4, 170 24 310 3, 380 18 163 1, 480 20 80 11. 4, 170 22 101 11. 4, 450 22 22 545 3, 140 17 144 1, 180 19 96 12. 4, 290 24 278 2, 860 11 85 1, 700 19 97 13. 4, 290 24 278 2, 860 11 85 1, 700 19 87 14. 5, 540 74 1, 170 2, 790 8 60 1, 780 16 76 15. 7, 540 76 1, 550 2, 850 8 57 1, 820 16 78 15. 7, 540 76 1, 550 2, 850 8 57 1, 820 16 78 15. 7, 540 76 1, 550 2, 880 16 124 1, 640 22 97 18. 9, 480 65 1, 860 2, 580 14 98 1, 550 24 97 19. 7, 940 52 1, 110 2, 260 12 73 1, 350 21 78 22. 9, 7, 840 52 1, 100 2, 220 8 49 1, 250 14 47 21. 7, 740 49 1, 100 2, 260 12 73 1, 350 21 78 22. 9, 940 86 2, 300 2, 260 8 49 1, 250 14 47 21. 7, 740 49 1, 100 2, 200 12 73 1, 350 12 37 22. 9, 940 86 2, 300 2, 260 10 61 1, 260 12 41 24. 9, 700 67 1, 750 2, 200 12 71 1, 330 14 65 25. 10, 100 66 1, 800 2, 200 11 65 1, 260 12 41 24. 9, 700 67 1, 750 2, 200 12 71 1, 330 14 65 27. 12, 400 119 3, 960 2, 240 15 100 1, 160 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 6 37 980 15 40 30. 8, 820 60 1, 430 9, 20 11 65 1, 900 14 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 5, 333 44, 470 - 1, 1025 30. 1, 140 18 18 18 18 18 18 18 18 18 18 18 18 18	5	6,740	42	764	4,290	25	290	1,500	14	57
7. 6, 200 38 6 856 3, 600 23 227 1, 380 21 78 8. 5, 560 30 458 3, 440 21 195 1, 380 21 78 9. 5, 130 24 332 3, 380 18 163 1, 480 20 80 10. 4, 170 24 310 3, 380 18 163 1, 480 20 80 11. 4, 170 22 101 11. 4, 450 22 22 545 3, 140 17 144 1, 180 19 96 12. 4, 290 24 278 2, 860 11 85 1, 700 19 97 13. 4, 290 24 278 2, 860 11 85 1, 700 19 87 14. 5, 540 74 1, 170 2, 790 8 60 1, 780 16 76 15. 7, 540 76 1, 550 2, 850 8 57 1, 820 16 78 15. 7, 540 76 1, 550 2, 850 8 57 1, 820 16 78 15. 7, 540 76 1, 550 2, 880 16 124 1, 640 22 97 18. 9, 480 65 1, 860 2, 580 14 98 1, 550 24 97 19. 7, 940 52 1, 110 2, 260 12 73 1, 350 21 78 22. 9, 7, 840 52 1, 100 2, 220 8 49 1, 250 14 47 21. 7, 740 49 1, 100 2, 260 12 73 1, 350 21 78 22. 9, 940 86 2, 300 2, 260 8 49 1, 250 14 47 21. 7, 740 49 1, 100 2, 200 12 73 1, 350 12 37 22. 9, 940 86 2, 300 2, 260 10 61 1, 260 12 41 24. 9, 700 67 1, 750 2, 200 12 71 1, 330 14 65 25. 10, 100 66 1, 800 2, 200 11 65 1, 260 12 41 24. 9, 700 67 1, 750 2, 200 12 71 1, 330 14 65 27. 12, 400 119 3, 960 2, 240 15 100 1, 160 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 7 43 1, 100 15 42 30. 8, 820 60 1, 430 2, 260 6 37 980 15 40 30. 8, 820 60 1, 430 9, 20 11 65 1, 900 14 41 29. 10, 900 66 2, 100 2, 200 7 43 1, 100 13 41 29. 10, 900 66 2, 100 2, 200 7 5, 333 44, 470 - 1, 1025 30. 1, 140 18 18 18 18 18 18 18 18 18 18 18 18 18	6	6.380	37	637	3.970	22	236	1.420	20	77
8. 5, 5,660 30 488 3,440 21 195 1,380 21 78 9. 5,130 24 332 3,380 18 163 1,480 20 80 10. 4,790 24 3310 3,380 18 163 1,700 22 101 11. 4,450 22 264 3,140 17 144 1,880 19 96 12. 4,290 22 255 3,000 13 105 1,760 19 90 13. 4,290 24 278 2,860 11 85 1,700 19 87 14. 5,840 74 1,170 2,700 8 60 1,760 16 76 15. 7,540 76 1,550 2,550 8 57 1,820 16 79 14. 1,100 102 2,290 2,860 12 93 1,880 19 96 16. 10,600 102 2,290 2,860 12 93 1,880 19 96 17. 11,200 44 1,940 2,860 16 124 1,640 22 97 18. 9,480 65 1,660 2,580 14 98 1,500 24 97 19. 7,940 52 1,100 2,260 12 73 1,350 21 76 20. 7,340 52 1,110 2,260 12 73 1,350 21 76 21. 7,740 49 1,020 2,280 8 49 1,250 14 47 22. 7,480 49 1,020 2,280 8 49 1,250 14 47 22. 9,480 49 1,020 2,280 10 61 12 30 13 22 23. 9,480 49 2,250 2,260 8 49 1,250 14 47 24. 9,700 67 1,750 2,200 11 65 1,350 12 37 25. 10,100 66 1,800 2,200 11 65 1,350 14 50 25. 10,100 66 1,800 2,200 11 65 1,350 14 50 25. 10,100 66 1,800 2,200 11 65 1,350 14 50 25. 10,100 66 1,800 2,200 11 65 1,350 14 51 25. 10,100 66 1,800 2,200 11 65 1,350 14 51 25. 10,100 66 1,800 2,200 12 71 1,130 14 50 25. 10,100 66 1,800 2,200 11 65 1,350 14 51 26. 11,500 80 2,480 2,480 15 100 1,280 13 45 25. 10,100 66 1,800 2,200 11 65 1,350 14 51 26. 11,500 80 2,480 2,480 15 100 1,280 13 45 27. 27. 400 80 80 2,480 2,480 15 100 1,280 13 45 28. 10,800 80 2,480 2,480 15 100 1,280 13 45 29. 10,800 80 2,480 2,480 15 100 1,280 13 45 29. 10,800 80 2,480 2,480 15 100 1,280 13 45 29. 10,800 80 2,480 2,480 15 100 1,280 13 45 29. 10,800 80 2,480 2,480 15 100 1,280 13 45 20. 11,500 80 80 80 1,400 80 80 80 80 80 80 80 80 80 80 80 80 8	7	6,200			3,660			1,380	21	78
10.   4, 790   24   310   3,360   18   163   1,700   22   101	8	5,660			3,440			1,380		
11.	9	5,130								
12	10	4, 180	24	310	3,360	10	103	1,700		101
12.	11	4,450		264	3,140			1,880		
15.	12,	4,290			3,000					
15.	13	5 840		1 170	2,860			1,700		
16.	15	7,540		1,550	2,650			1,820		
17,	l									
18.	16	10,600		2,920	2,860			1,880		
19.	18	9 480								
20	19	7,940			2, 260			1,350		
21.	20	7,340		1,030	2,260			1,250		
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23. 9,920 86 2,300 2,280 10 66 1,266 12 41 24. 9,700 66 1,800 2,200 11 65 1,350 14 50 25. 10,100 66 1,800 2,200 11 65 1,350 14 51 26. 11,500 80 2,480 2,460 15 100 1,280 13 45 27. 12,400 119 3,980 2,460 15 100 1,66 13 41 28. 12,200 91 3,000 2,200 11 65 1,090 14 41 28. 12,200 91 3,000 2,200 11 65 1,090 14 41 29. 10,800 66 2,010 2,280 7 43 1,030 15 42 30. 8,820 60 1,430 2,280 6 37 980 15 40 31 2,320 8 50  Total. 248,770 44,074 97,920 5,333 44,470 1,925  Total. 248,770 15 46 904 35 85 682 17 31 88 35 2. 1,150 15 46 904 35 85 682 17 31 3. 1,270 14 48 857 32 43 650 17 30 5. 1,820 32 157 857 36 83 650 17 30 5. 1,820 32 157 857 36 83 650 17 30 5. 1,840 35 155 821 30 66 623 18 32 6. 1,640 35 155 821 30 66 623 18 32 6. 1,940 68 356 1,410 60 228 588 19 30 8. 1,940 68 356 1,410 60 228 588 19 30 9. 1,920 62 305 1,470 62 246 574 15 23 10. 2,130 62 305 1,400 62 305 1,400 60 228 588 19 30 11. 2,580 94 655 1,130 34 104 800 15 24 11. 2,580 94 655 1,130 34 104 800 20 37 11. 1,520 35 157 857 36 83 650 17 33 15. 1,820 68 404 1,090 32 94 800 20 37 15. 1,820 68 404 1,090 32 94 800 20 37 15. 1,540 48 200 1,240 47 157 682 15 28 16. 2,000 115 621 1,210 37 157 682 15 28 17. 1,550 141 582 1,130 36 115 753 18 36 11. 1,500 48 105 15 621 1,210 37 157 682 15 28 17. 1,500 38 33 34 1 88 94 22 56 64 574 9 14 21. 1,500 48 103 15 621 1,100 35 104 528 10 14 21. 1,500 48 103 15 621 1,100 35 104 528 10 14 21. 1,500 48 103 15 621 1,100 35 104 528 10 14 22. 1,1310 55 184 100 1,240 47 157 682 15 28 24. 1,150 44 133 1,280 34 106 57 1,280 38 115 75 88 9 14 25. 1,150 38 157 886 28 661 580 9 17 26. 1,150 38 157 884 24 55 588 9 17 26. 1,150 38 157 884 24 55 588 9 17 27. 1,000 34 100 1,240 47 157 682 15 588 9 14 28. 1,150 38 157 884 24 55 588 9 14 29. 1,150 38 157 884 24 55 588 9 14 20. 2,060 93 517 886 28 661 580 89 17 21. 1,500 38 157 884 24 55 588 9 14 22. 1,150 58 187 884 24 55 588 9 14 23. 1,100 38 157 884 24 55 588 9 14 24. 1,500 38 157 884 24 55 588 9 14 25. 1,1500 38 157 884 24 55 588 9 14 26. 1,1500 38 157 884 24 55 58	22		49 84	2,150	2,130			1.150		
24.	23	9,920	86					1,260		
28.	24	9,700	67	1,750	2,200		71	1,330		
27.	25	10,100	66	1,800	2,200	11	65	1,350	14	51
27.	26	11 500	80	2 480	2 460	15	100	1 280	13	45
28   12,200   91   3,000   2,200   11   65   1,090   14   41   41   42   30   8,820   60   1,430   2,280   6   37   980   15   42   42   30   8,770     44,074   97,920     5,333   44,470     1,925	27	12,400		3.980	2,460					
30 8,820 60 1,430 2,280 6 37 980 15 40	28	12,200		3,000	2,200	11		1,090	14	
Total   248,770     44,074   97,920     5,333   44,470     1,925	29	10,800								
Total   248,770     44,074   97,920     5,333   44,470     1,925	30	8,820		1,430	2,260			980	15	
July				44 074				44 470		
1         960         12         31         980         46         122         713         18         35           2         1, 150         15         46         904         35         85         682         17         31           3         1, 270         14         48         857         32         43         650         17         30           4         1, 480         16         64         830         30         67         650         17         30           5         1, 820         32         157         857         36         83         650         18         32           6         1, 640         35         155         821         30         66         623         18         30           7         2, 060         48         267         1, 150         52         161         802         20         32           8         1, 940         68         356         1, 410         60         2288         588         19         30           9         1, 820         62         356         1, 230         44         146         50         14         21 </td <td>====</td> <td></td> <td></td> <td></td> <td>- 51,000</td> <td></td> <td>5,000</td> <td></td> <td></td> <td></td>	====				- 51,000		5,000			
2 1, 150 15 46 904 35 85 682 17 31 31 3 1, 1270 14 48 857 32 43 650 17 30 5 1, 270 14 48 857 32 43 650 17 30 5 1, 820 32 157 857 36 83 650 17 30 5 1, 820 32 157 857 36 83 650 18 32 6 1, 640 35 155 821 30 66 623 18 30 7 2, 660 48 267 1, 150 52 161 602 20 32 8 1, 940 68 356 1, 410 60 228 588 19 30 9 1, 820 62 305 1, 470 62 246 574 15 23 10 2, 130 62 356 1, 230 44 146 550 14 21 11 2, 580 94 655 1, 130 34 104 800 15 24 12 2, 200 68 404 1, 090 32 94 690 20 37 13 1, 820 56 275 1, 120 38 115 753 18 36 14 1, 530 50 206 1, 140 36 111 729 17 33 15 1, 540 48 200 1, 240 47 157 682 15 28 16 2, 000 115 621 1, 210 37 121 652 20 35 17 1, 530 141 582 1, 120 36 109 650 11 19 18 1, 530 49 198 942 25 64 574 9 14 20 2, 000 93 517 866 26 61 560 8 12 21 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,										
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6 1,640 35 155 821 30 66 623 18 30 7 2,060 48 267 1,150 52 161 602 20 32 8 1,940 68 356 1,410 60 228 588 19 30 9 1,820 62 305 1,470 62 246 574 15 23 10 2,130 62 356 1,230 44 146 550 14 21 11 2,580 94 655 1,130 34 104 600 15 24 12 2,200 68 404 1,090 32 94 690 20 37 13 1,820 56 275 1,120 38 115 753 18 36 14 1,550 50 206 1,140 36 111 729 17 33 15 1,540 48 200 1,240 47 157 682 15 28 16 2,000 115 621 1,210 37 121 652 20 35 17 1,530 141 582 1,120 36 109 650 11 19 18 1,420 64 245 1,030 27 75 600 8 13 19 1,500 49 198 942 25 64 574 9 14 20 2,060 93 517 866 26 61 560 8 12 21 1,520 83 341 848 24 55 588 9 14 22 1,310 55 194 1,100 35 104 528 10 14 23 1,120 44 133 1,260 34 116 547 7 10 24 1,050 38 108 1,200 30 97 586 6 10 25 1,020 35 96 1,280 32 110 616 8 13 26 1,050 33 94 1,190 28 90 698 9 17 27 1,050 33 94 1,00 1,020 23 63 675 10 18 28 1,050 33 94 1,190 28 90 698 9 17 27 1,050 33 94 1,190 28 90 698 9 17 27 1,050 33 94 1,190 28 90 698 9 17 27 1,050 33 94 1,00 1,020 23 63 675 10 18 28 1,050 33 94 1,190 28 90 698 9 17 27 1,090 34 100 1,020 23 63 675 10 18 28 1,050 33 94 1,190 28 90 698 9 17 27 1,090 34 100 1,020 23 63 675 10 18 28 1,550 38 157 894 21 51 713 13 25 29 1,700 73 335 830 17 38 713 15 29 30 1,270 77 264 794 19 41 785 18 38 31 1,090 58 171 745 21 42  Total 48,200 7,681 32,558 3,096 19,223 733	4	1,480		64	830		67	650		
7	5	1,820	32	157	857	36	83	650	18	32
7	6	1.640	35	155	821	30	66	623	18	30
8 1, 940 68 356 1, 410 60 228 588 19 30 9 1, 820 62 305 1, 470 62 246 574 15 23 10 2, 130 62 356 1, 230 44 146 550 14 21 11 2, 580 94 655 1, 130 34 104 600 15 24 12 2, 200 68 404 1, 090 32 94 690 20 37 13 1, 820 56 275 1, 120 38 115 753 18 36 14 1, 530 50 206 1, 140 36 111 729 17 33 15 1, 540 48 200 1, 240 47 157 682 15 28 16 2, 000 115 621 1, 210 37 121 652 20 35 17 1, 530 141 582 1, 120 36 109 650 11 19 18 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,		2,060								
10 2,130 62 356 1,230 44 146 550 14 21  11 2,580 94 655 1,130 34 104 800 15 24  12 2,200 68 404 1,090 32 94 890 20 37  13 1,820 56 275 1,120 38 115 753 18 36  14 1,530 50 206 1,140 36 111 729 17 33  15 1,540 48 200 1,240 47 157 682 15 28  16 2,000 115 621 1,210 37 121 652 20 35  17 1,530 141 582 1,120 36 109 650 11 19  18 1,420 64 245 1,030 27 75 600 8 13  19 1,500 49 198 942 25 64 574 9 14  20 2,060 93 517 866 26 61 560 8 12  21 1,520 83 341 848 24 55 588 9 14  22 1,310 55 194 1,100 35 104 528 10 14  23 1,120 44 133 1,260 34 116 547 7 10  24 1,050 38 108 1,200 30 97 586 6 10  25 1,020 35 96 1,280 32 110 616 8 13  26 1,050 38 108 1,200 30 97 586 6 10  25 1,050 33 94 1,190 28 90 698 9 17  27 1,090 34 100 1,020 23 63 675 10 18  28 1,050 38 157 894 21 51 713 13 25  29 1,090 34 100 1,020 23 63 675 10 18  28 1,050 38 157 894 21 51 713 13 25  29 1,090 34 100 1,020 23 63 675 10 18  28 1,050 38 157 894 21 51 713 13 25  30 1,270 77 264 794 19 41 785 18 38  31 1,090 58 171 745 21 42  Total 48,200 7,681 32,558 3,096 19,223  Total 48,200 7,681 32,558 3,096 19,223  Total 48,200 7,681 32,558 3,096 19,223  Total discharge for year (cfs-days)		1,940		356	1,410					
11 2,580 94 655 1,130 34 104 800 15 24  12 2,200 68 404 1,090 32 94 690 20 37  13 1,820 56 275 1,120 38 115 753 18 36  14 1,530 50 206 1,140 36 111 729 17 33  15 1,540 48 200 1,240 47 157 682 15 28  16 2,000 115 621 1,210 37 121 652 20 35  17 1,530 141 582 1,120 36 109 650 11 19  18 1,420 64 245 1,030 27 75 600 8 13  19 1,500 49 198 942 25 64 574 9 14  20 2,060 93 517 866 26 61 560 8 12  21 1,520 83 341 848 24 55 588 9 14  22 1,310 55 194 1,100 35 104 528 10 14  23 1,120 34 133 1,260 34 116 547 7 10  24 1,050 38 108 1,200 30 97 586 6 10  25 1,020 35 96 1,280 32 110 616 8 13  26 1,050 33 94 1,190 28 90 698 9 17  27 1,090 34 100 1,020 23 63 63 675 10 18  28 1,530 38 157 894 21 51 713 13 25  29 1,090 34 100 1,020 23 63 63 675 10 18  28 1,530 38 157 894 21 51 713 13 25  29 1,700 77 335 830 17 38 713 15 29  30 1,270 77 264 794 19 41 785 18 38  31 1,090 58 171 745 21 42  Total 48,200 7,681 32,558 3,096 19,223 733  Total discharge for year (cfs-days)	9				1,470					
12	20	٥, ١٥٥	04	300	1,230	44	140	300	14	21
12		2,580		655	1,130					
15	12	2,200		404	1,090	32	94		20	37
15 1,540 48 200 1,240 47 157 682 15 28  16 2,000 115 621 1,210 37 121 652 20 35  17 1,530 141 582 1,120 36 109 650 11 19  18 1,420 64 245 1,030 27 75 600 8 13  19 1,500 49 198 942 25 64 574 9 14  20 2,060 93 517 866 26 64 574 9 14  21 1,520 83 341 848 24 55 588 9 14  22 1,310 55 194 1,100 35 104 528 10 14  23 1,120 44 133 1,280 34 116 547 7 10  24 1,050 38 108 1,200 30 97 586 6 10  25 1,020 35 96 1,280 32 110 616 8 13  26 1,050 33 94 1,190 22 90 698 9 17  27 1,090 34 100 1,020 23 63 63 675 10 18  28 1,530 38 157 894 21 51 713 13 25  29 1,700 73 335 830 17 38 713 15 29  30 1,270 77 264 794 19 41 785 18 38  Total discharge for year (cfs-days)	14.	1,820		275	1,120					
16		1,540		200	1,140					
18 1, 420 64 245 1, 030 27 75 600 8 13  19 1, 500 49 198 942 25 64 574 9 14  20 2, 060 93 517 866 26 61 560 8 12  21 1, 520 83 341 848 24 55 588 9 14  22 1, 310 55 194 1, 100 35 104 528 10 14  23 1, 120 44 133 1, 280 34 116 547 7 10  24 1, 050 38 108 1, 200 30 97 588 6 10  25 1, 020 35 96 1, 280 32 110 616 8 13  26 1, 050 33 94 1, 190 28 90 698 9 17  27 1, 090 34 100 1, 020 23 63 675 10 18  28 1, 530 38 157 894 21 51 713 13 25  29 1, 700 73 335 830 17 38 713 15 29  30 1, 270 77 264 794 19 41 785 18 38  31 1, 090 58 171 745 21 42  Total 48, 200 7, 681 32, 558 3, 096 19, 223 733	,			, ,			)			
18 1, 420 64 245 1, 030 27 75 600 8 13  19 1, 500 49 198 942 25 64 574 9 14  20 2, 060 93 517 866 26 61 560 8 12  21 1, 520 83 341 848 24 55 588 9 14  22 1, 310 55 194 1, 100 35 104 528 10 14  23 1, 120 44 133 1, 280 34 116 547 7 10  24 1, 050 38 108 1, 200 30 97 588 6 10  25 1, 020 35 96 1, 280 32 110 616 8 13  26 1, 050 33 94 1, 190 28 90 698 9 17  27 1, 090 34 100 1, 020 23 63 675 10 18  28 1, 530 38 157 894 21 51 713 13 25  29 1, 700 73 335 830 17 38 713 15 29  30 1, 270 77 264 794 19 41 785 18 38  31 1, 090 58 171 745 21 42  Total 48, 200 7, 681 32, 558 3, 096 19, 223 733	16	2,000			1,210					
19	18.	1,530	141		1,120					
21 2, 960 93 517 866 26 61 560 8 12 21 1,520 83 341 848 24 55 588 9 14 22 1,310 55 194 1,100 35 104 528 10 14 23 1,120 44 133 1,260 34 116 547 7 10 24 1,050 38 108 1,200 30 97 588 6 10 25 1,020 35 96 1,280 32 110 26 1,050 33 94 1,190 28 90 698 9 17 27 1,090 34 100 1,020 23 63 675 10 18 28 1,530 38 157 894 21 51 713 13 25 29 1,700 73 335 830 17 38 713 15 29 30 1,270 77 264 794 19 41 765 18 38 31 1,090 58 171 745 21 42 Total discharge for year (cfs-days)	19	1.500								
22		2,060								
22	21	1 520	gq	941	040	94	55	500	Δ.	1.4
23		1,310								
24	23	1 120	44	133	1,260	34				
26 1, 050 33 94 1, 190 28 90 698 9 17 27 1, 090 34 100 1, 020 23 63 675 10 18 28 1, 530 38 157 894 21 51 713 13 25 29 1, 700 73 335 830 17 38 713 15 29 30 1, 270 77 264 794 19 41 785 18 38 31 1, 090 58 171 745 21 42  Total 48, 200 7, 681 32, 558 3, 096 19, 223 733  Total discharge for year (cfs-days) 1, 897, 538	24	1,050	38	108	1,200	30	97	588	6	10
27	25	1,020	35	96 [	1,280	32	110	616	8	13
27	26	1,050	33	94	1.190	28	90	698	9	17
28 1, 530 38 157 894 21 51 713 13 25 29 1,700 73 335 830 17 38 713 15 29 30 1,270 77 264 794 19 41 765 18 38 31 1,090 58 171 745 21 42  Total 48,200 7,681 32,558 3,096 19,223 733  Total discharge for year (cfs-days) 1,897,538	27	1.090	34	100	1,020	23	63	675	10	18
30 1, 270 77 264 794 19 41 785 18 38 31 1,090 58 171 745 21 42		1,530		157	894					
31 1,090 58 171 745 21 42 Total 48,200 7,681 32,558 3,096 19,223 733  Total discharge for year (cfs-days) 1,897,538	30	1,700								
Total. 48,200 7,681 32,558 3,096 19,223 733  Total discharge for year (cfs-days) 1,897,538	31	1,090						100	10	J0
Total discharge for year (cfs-days) 1,897,538							3,096	19,223		733
Total load for year (tons)	Total di	scharge for	year (cfs-	days)					1,	897,538
	Total lo	ad for year	(tons)			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		<u></u>	

MUSKINGUM KIVER BASIN--Continued

MUSKINGUM RIVER AT DRESDEN, OHIO. --Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. Dottom withdrawal tube; D. decandation: P. pipette, S. siever N. in native water; W. win distilled water: C. chemically discussed: M. machanically discussed.

		Methods of analysis		BSWCM	BSWCM	BSWCM	BSNM	BSWCM
			1.000					
			0.500 1.000	100	38	100	;	;
			0.350					
		llimeters	0, 250	86	9.6	66	90	100
		ize, in m	0.125	97	8 8	66	66	66
ersea)		Percent finer than indicated size, in millimeters	0.062 0.125	92	6.6	86	66	66
cally disp	sediment	ner than i	0. 031	91	3 &	96	97	97
mecnani	Suspended sediment	Percent fi	0.016	84	2 28	88	82	90
ersea, m,	S	_	0.008	71	2.2	75	89	80
cally dispe			0.004	56	62.5	49	48	86
C, chemix			0.002	74	49	49	34	52
w, in distilled water; c, chemically dispersed; M, mechanically dispersed;		Concentration of suspension	analyzed (ppm)	1,230	497	1,310	1,260	668
w, mo		Concentration	of sample (ppm)	308	310	800	008	704
	Water	tem- per-	ature (° F)					
		Discharge (cfs)		12,700	24,800	26,300	26,300	27, 200
		Time		3:30 p. m.	10:45 a. m.	4:05 p. m.	4:05 p. m.	6:50 p.m.
	i	Date of collection		Dec. 30, 1954	Feb. 23, 1955	Mar. 4	Mar. 4	Mar. 4

# MUSKINGUM RIVER BASIN -- Continued

# MUSKINGUM RIVER AT MCCONNELSVILLE, OHIO

.--at bridge on State Highway 37 at McConnelsville, Morgan County, 0.5 mile upstream from gaging station and Dam No. 7, and 3 miles downstream from

Oilspring

RECORDS AVAILABLE.—Chemical analyses (of gaging station).

RECORDS AVAILABLE.—Conductal analyses of corcidor 1950 to September 1955.

RECORDS AVAILABLE.—Conductal analyses of october 1950 to September 1955.

Water temperatures: October 1960 to September 1951, october 1950.

RATREMES: 1954-55.—1018solved soilds: Maximum, 1070 ppm Oct. 13-15; minimum, 195 ppm Mar. 5-10.

RECORDS AVAILABLE.—Chissolved soilds: Maximum, 130 ppm Mar. 5-10.

Specific conductance: Maximum 49.7 Aug. 4, 1955; minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 1967.

RETREMES: 1950-51, 1954-55.—Dissolved soilds: Waximum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 2,070 ppm Oct. 13-15, 1954, minimum, 1967.

Specific conductance: Maximum Aplity, 3,410 micrombos Oct. 14, 1954, minimum daily, 240 micrombos Oct. 14, 1955, minimum, 16eezing point Feb. 2, 1951, Feb. 10-11, 1955.

RATEMERS: Waximum Aplity, 3,410 micrombos Oct. 14, 1954, minimum daily, 240 micrombos Oct. 13-15, 1954, minimum, 16eezing point Feb. 2, 1951, Feb. 10-11, 1955.

Specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1954 Robertener 1955 given in WSP INSO, Flow regulated by 14 flood-control reservoirs.

	2 S	2 8 "	_		
	Hardness as CaCO	Calcium, mag- nesium	269	916	300
22	olids 180°C)	Tons per day	5,219	9,054	20 180
ber 19	Dissolved solids (residue at 180°C)	Tons per acre- foot			
to Septem	Dise (resi	Parts per mil- lion	1,564	2,070	705
r 1954	Bo-	ron (B)			
Octobe	-ţN	ride trate (F) (NO ₃ )	0.9 3.0	8.4	4
r year	Fluo-	ride (F)	0.9	1.0	
Chemical analyses, in parts per million, water year October 1954 to September 1955	Chlo-	ride (CI)	630	866	969
per mil		Sulfate (SO ₄ )	169	180	193
in parts	Bicar-	bonate (HCO ₃ )		108	
nalyses,	Potas-	stum (K)	6.1	9.6	ď
emicala	;	(Na)	213	274	23
์ซี	Mag-	sium (Mg)	25	22	Ę
	Cal-	ctum (Ca)	236	325	139
		Iron (Fe)	0.02	0.	5
		Silica (SiO ₃ )	2.7	٥.	9
			1		

3	5 5	~ «	<b>'</b> !	G	2	G	01	_	9	9	7	<b>∞</b>	9	9	G	9	7	80	80	12	<b>∞</b>
	H	7.0	7.2	7.1	7.2	7.3	4.7	-3	7.5	7.6	7.8	7.6	7.5	7.4	7.5	7.5	7.7	7.4	7.6	7.7	7.7
Specific conduct-	ance (micro- mhos at 25°C)	2, 420	1,310	245	889	957	1, 330	1,460	1,980	1,610	1,450	1,690	1,400	1,270	839	226	736	470	587	460	629
-0S	dium adsorp- tion ratio																				_
Per-	So- dium																				_
Hardness as CaCO,	Non- carbon- ate	613	323	144	188	269	358	379	521	416	367	438	366	308	217	151	209	111	155	122	176
Hard as C	Calcium, mag- nesium	692	390	204	220	320	458	489	637	525	475	541	465	392	285	208	258	164	220	186	248
olids 180°C)	Tons per day	5,219	20, 180	8,085	4,856	3,499	3,705	3, 371	4,535	2,005	6,010	6, 428	5, 121	10,670	5,867	13, 100	18,270	8,307	11,860	6,875	5, 738
Dissolved solids (residue at 180°C)	Tons per acre- foot																			_	_
Dia (res	Parts per mil- lion	1,564	795	349	422	583	196	870	1,134	941	840	992	830	737	483	313	451	273	347	274	394
ě	ron (B)																				
-iX	trate (NO _s )	3.0	4. 2.	8.2	7.9	6.4	5.2	6.2	6.9	6.4	4.	4.5	6.2	5.4	5.8	6.1	8.1	6.7	0.7	8.1	6.9
	ride (F)	0.9	? !	4.	4.	4.	5.	9.	۲.	۲.	9	9	9.	9.	4.	8.	1	~	e,	4	?
Chlo-	ride (C1)	630	252	64	101	162	275	312	479	320	300	388	296	268	149	99	132	8	11	40	96
	Sulfate (SO,)	169	133	97	117	143	153	156	156	172	164	159	151	144	114	107	88	85	85	98	501
Bicar-	bonate (HCO ₃ )	96	88	72	73	100	122	134	138	134	130	126	119	66	80	89	09	64	8	77	88
Potas-	stum (K)	6.1	9.0	4.3	4.0	4.1	4.5	4.	5.4	5.2	4	4.2	4.0	3.8	3.1	5.9	2.3	2.2	2.1	2.1	2.5
	Sodium (Na)	213	83	24	34	22	85	104	143	116	101	122	97	96	20	22	41	18	26	16	31
Mag-	sium (Mg)	25	15	10	10	15	15	11	22	23	21	20	20	17	13	12	13	8.7	13	-	13
Cal-	ctum (Ca)	236	132	65	83	116	159	168	218	173	155	184	153	128	92	63	82	5	67	26	18
	(Fe)	0.02	3 6	4	50.	. 22	9.	-0.	10.	.03	60	.07	.07	.10	.11	.07	.03	03	0.	.04	.03
	(SiO ₃ )	2.7	. 6	8.1	8.6	9.4	9.0	9.5	7.5	6.0	6.3	6.3	6.2	6.3	7.7	7.2	8.0	8.0	6.9	7.1	7.8
Mean	discharge (cfs)	1,236					1,724	1,435	1,481	1,970						15, 500					5, 394
	Date of collection	Oct. 1-12, 1954	Oct. 17-18	Oct. 19-22	Oct. 23-28	Oct. 29-Nov. 3	Nov. 4-10	Nov. 11-16	Nov. 17-23	Nov. 24-Dec. 1	Dec. 2-4	Dec. 5-6	Dec. 7-18	Dec. 19-20	Dec. 21-29	Dec. 30-31	Jan. 1-2, 1955	Jan 3-5	Jan. 6-9	Jan. 10-12	Jan. 13-17

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4, w	4.7. 6.1. 7.1. 8.1. 9.0 9.0 1.7	7.7.1.10	& & & & & & & & & & & & & & & & & & &	8 4 8 8	8464-88	2
7. 7.				7.7.7.0		
884 892	1,250 647 811 514 378	423 306 447 443 563 564	677 912 1,130 931	1,080 1,560 1,890 1,370	1,030 791 926 931 931 1,030	1,030
		<del></del>				$\dashv$
226	329 172 203 134 102	110 82 115 111 138 197	237 291 226	270 411 505 367	252 168 231 223 228 252 246	262
				<del></del>		_
$\frac{313}{320}$	432 227 268 191 191	168 130 168 169 214 273 215	252 327 394 332	380 508 590 442	341 289 320 320 318 350	346
17	806 716 560 060 640	888888	89 11 81 45	899 940 277 556	121882821	230
5, 417 3, 373	5,8 12,0 14,6	15,090 111,860 14,780 14,780 7,765 8,785 9,786	6,569 5,511 5,281 4,145	<b>8</b> , 4, 10, 4, 92 9 19 12	3, 201 1, 856 1, 930 1, 869 1, 319 1, 151 1, 151	6,2
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581 524	759 378 494 302 227	255 195 245 245 329 329 340	427 560 696 541	684 966 1,220 832	600 457 535 535 524 624 608	617
~ 0.	8.20.80		7.2.1.2. 7.4.0.0.	& & & ±	8. 2. 2. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	٠. ا
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4iri	rci 4,   12 i 22		40.40			9.0
151 142	262 101 154 68 83	41 17 44 45 60 107	94 147 210 132	176 335 442 280	188 108 136 141 130 158	188
118 127	143 101 102 82 73	81 76 78 76 96 96 113	101 126 133 144	147 159 163 153	117 121 147 139 159 167 167	129
103	26 66 71 71 68	020 000 000 000 000 000 000 000 000 000	96 1110 124 129	1134 104 92	109 1123 1118 1118 126	103
3.0	8 2 2 2 2 2 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	4 2 4 4 5 6 5 8	2.2.8. 1.0.8.8. 1.2.2.4.	6. 4. 4. 8. 4. 0 6. 5.	4.4.6.4.4.C F. 8. 2. 4. 6. 8. 8.	8.8
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51	25 2 4 S	88 87 17 48 88	53 68 52	68 110 143 94	65 55 56 67 68 67	99
23	11123	111 9.3 9.5 10 14 13	119 119 20	22622	2222222	81
86	69 90 45	8 8 4 4 9 4 9 4 9 4 9 4 9 4 9 9 9 9 9 9	1088	193	95 95 96 96 96	90
01.0	9. 4. 6. 51.	.01 .02 .02 .01 .03	2222	8.288	888888	0.04
8.5	9.4 7.5 7.5 8.7	7.8.8.8.8. 7.1.7.4.8.8.8.9.	7.5 5.0 3.1	7.2.2.2.4.6.4.0.4.0.4.0.4.0.4.0.4.0.4.0.4.0.4.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.9
3,453	2,833 8,540 12,420 14,790 23,880	21, 920 22, 520 22, 350 21, 390 8, 741 6, 952 10, 660	5,698 3,645 2,810 2,838	2,111 1,894 1,602 2,028	1,976 1,504 1,294 1,294 683 683	5, 793
		NNNN A				
955	Feb. 1-6 Feb. 7-8 Feb. 9-10 Feb. 11-22	1		June 1-12 June 13-23 June 24-28 June 29-July 15	July 16-20 July 21-25 July 26-Aug. 10 Aug. 21-2ept. 5 Sept. 6-16 Sept. 17-30	p :
Jan. 18-24, 1955 Jan. 25-31	6 8 10 -22	Mar. 1-4.  Mar. 5-10.  Mar. 11-20.  Mar. 21-31.  Apr. 1-7.  Apr. 18-30.	May 1-6 May 7-18 May 19-23 May 24-31	June 1-12 June 13-23 June 24-28 June 29-July 15	July 16-20 July 21-25 July 26-Aug. 10 Aug. 11-26 Aug. 27-Sept. 5 Sept. 6-16	Time-weighted average ^a
n. 18	6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	r. 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	ty 1-6 ty 7-1 ty 19-	ne 13. ne 13. ne 24- ne 29-	July 16-20 July 21-25 July 26-Aug. Aug. 11-26. Aug. 27-Sept Sept. 6-16 Sept. 17-30.	Time-weig average
Jan	라 된 된 된 의 의 의 의 의	A A P A P A P A P A P A P A P A P A P A	A A A	222	Jul Jul Aug Ser Ser	-

a Represents 99 percent of days and 99 percent of runoff.

MUSKINGUM RIVER BASIN -- Continued

MUSKINGUM RIVER AT McCONNELSVILLE, OHIO--Continued

į								Te	mpera /Cont	ure (° F	of wa	Temperature (°F) of water, August to September 1954 /Continuous ethyl alcohol-actuated thermograph/	gust to S tuated t	septemi her mog	raph7	4								
	August	ıst	September	nber	L	Ψ	August	Septe	September		August	ıst	September	per		August	ıst	September	per		August	st	September	ber
ay	max	min	max	min	Day	max	iii	max	mim	Day	max	nim	тви	min	Day	max	min	TOBX	min	Day	тви	uju	тавх	min
_	86	84	82	80	7	82	82	83	82	13	82	1.1	79	92	19	82	42	62	77	25	98	83	74	73
~	82	84	28	79	œ	84	8	83	81	14	2	4	77	92	8	83	62	62	77	98	84	82	74	73
	84	83	8	62	6	8	2	8	8	2	8	77	62	11	77	81	92	28	92	22	98	82	92	72
4	82	8	8	79	9	<b>8</b>	2	83	8	9	8	77	8	7.2	22	82	62	92	12	8	82	83	22	73
<u>۔</u>	84	82	8	28	11	8	20	98	82	17	81	22	81	2.2	23	82	82	7.1	75	53	98	83	22	73
9	83	8	84	8	12	2	28	چ	F	18	8	42	42	77	24	98	84	75	74	8	84	83	22	74
			_		_															31	83	81	1	;
rage												38g.			:					:	83	18	62	12

MUSKINGUM RIVER BASIN--Continued

Market Market Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street, Street,

MUSKINGUM RIVER AT MCCONNELSVILLE, OHIO--Continued Temperature (*F) of water, water year October 1954 to September 1955

-1	1																															1	1
	moer	min	81	79	79	79	79	79	78	2	5	2.1.	77	16	72	75	16	77	82	28	9 2	? [	3:	77	18	75	74	73	73	74	74		77
1	sebremoer	max	82	82	83	82	82	83	8	81	6 6	2	78	82	22	18	8	80	81	25	2 6	3 6	6.2	28	77	76	75	74	75	72	75	:	46
	ısı	min	87	88	88	8	06	96	8	88	88	8	85	84	82	85	81	81	83	83	8 8		8 8	8	83	82	82	82	83	83	88	82	82
	August	max	63	91	63	94	93	92	92	90	68	8	88	98	82	8	82	87	98	82	8 2		8 8	84	88	87	87	84	82	98	8	83	88
1	Juny	min	81	82	84	84	81	86	82	98	84	87	82	82	82	83	8	83	84	82	8 8	3 8	3 6	98	98	86	87	87	98	84	86	2	84
1	3	max	82	98	87	8	8	88	88	88	98	82	84	84	98	82	82	85	98	88	8 8	3 6	. 6	8	87	90	06	68	83	88	6	6	87
	June	min	7.5	72	72	73	73	74	75	74	74	74	74	75	75	5	2	72	73	4.	92	2 6	0 %	62	80	8	42	4	42	79	19	:	75
ľ	3	max	73	74	16	72	42	42	77	92	75	22	77	92	72	22	73	76	92	8	£ 5	: :	4 5	= =	82	85	81	82	84	84	83	:	78
	May	min	29	8	62	64	67	67	88	69	67	9	99	99	65	65	63	25	65	67	68	3 8	2 6	2	74	73	74	75	92	75	74	23	89
[	Ξ	max	9	62	65	67	66	69	69	69	69	67	67	99	99	65	65	65	67	67		: :	* 5	7.	122	75	78	77	28	46	76	74	70
raph/	April	min	41	43	45	84	49	51	25	25	51	21	25	25	22	28	57	57	57	20	8 2	3 3	3 6	8	8	19	65	57	29	57	24	:	55
thermograph/	VΡ	max	43	45	48	49	5	52	25	25	25	25	52	22	26	8	86 	57	28	8	2 5	5 6	2 6	2 6	8	62	-6	66	22	57	29	ا	26
tuated	March	min	40	43	43	43	4	44	41	33	68	39	42	44	45	46	46	46	45	44		2 5	2 7	44	43	4	42	4	39	38	39	<del>4</del>	42
ohol-ac	ME	max	43	43	43	44	46	46	44	41	30	42	44	45	46	46	46	46	46	45	44	; ;	44	4	4	44	44	42	40	39	40	4	44
thyl al	February	min	34	34	38	33	32	35	33	8	8	35	32	34	33	33	ee Ee	33	33	33	3 3	5 2	* *	8 %	. 6	3.	37	3.7	38	;	;	;	34
Continuous ethyl alcohol-actuated	Febi	max	34	36	8	8	32	35	32	33	34	34	34	25	34	33	8	33	33	34	<b>2</b> 2	5 6	9 5	5 5	5 5	37	2.6	8	4	1	:	١	35
∕Cont	fanuary	min	8	68	జ	8	4	40	42	4	8	66	39	8	88	37	37	36	36	32	35	3 8		8 %	3 5	32	25	8	8	35	32	32	37
	Jan	max	8	68	8	39	40	42	42	42	9	66 —	39	8	88	88	37	37	36	38	36	3 8		3 %	5	32	8	8 8	35	35	32	32	37
	December	min	43	43	42	41	41	39	88	37	37	<u></u>	37	37	37	37	37	37	88	38	8 8	3 8	8 %	3 2	5 2	32	Ř	8	8 8	37	39	8	38
-	Dec	max	44	43	43	42	41	41	33	88	38	<b>8</b>	38	8	37	31	37	88	88	8	88	3 8	9 %	S #	£	32	ę,	8 8	3.2	68	8	39	38
	November	uju	52	49	48	48	47	46	46	46	46	45	42	46	47	42	47	48	48	49	49	3 1	2 2	3 5	4	64	40	4	. 4	4	44		48
:	Nov	max	54	22	49	48	48	47	48	48	47	46	47	41	49	48	20	49	20	20	2 23	9 6	25.	3 2	5 6	49	40	49	4	45	44	!	49
	tober	mtm	74		_						8			88		_					2 23			_	_	5	_	_			54	-	_
,	Octo	max	L		. 76					_	2	_	. 07			_	- -				. 55				_	54					26	_	. 64
	Day	ra's	1	2,	3	4	g	6,	7	8	6	10	11	12.	13	14	15	16	17	18	20	ā	29	23	24		26	27	28	29	30	31	Average

### LITTLE KANAWHA RIVER BASIN

## LITTLE KANAWHA RIVER AT GLENVILLE, W. VA.

LOCATION. --At water plant, at Glenville, Gilmer County, 0.7 mile upstream from Sycamore Run and half a mile upstream from gaging station at Glenville.

DRAINAGE AREA. --386 square miles (above gaging station).

ECCORDS AVAILABLE. --Water temperatures: October 1946 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 86°F on several days during July and August; minimum, 33°F Jan. 30 to Feb. 1.

EXTREMES, 1946-55. --Water temperatures: Maximum, 86°F on several days during August 1947, July and August 1955; minimum, freezing point on many days during winter months.

REMARKS. --Temperature records furnished by West Virginia Service Company. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water water year October 1954 to September 1955

		T	emperatu	re (°F) of	water, w	ater year	October	1954 to Se	eptember	1955		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Jul _. ,	Aug.	Sept.
1	71	47	41	43	33	45	46	62	74	87	86	78
2	70	46	40	44	34	47	48	64	73	8.	86	78
3	70	43	40	44	35	47	50	66	73	83	86	76
4	72	44	40	44	35	48	52	68	75	8.3	86	74
5	74	44	40	44	36	48	53	69	76	83	86	73
6	70	44	40	46	37	47	54	69	78	83	86	72
7	66	44	39	44	38	46	52	69	66	8,	80	71
8	60	44	38	42	39	47	53	69	65	77	81	71
9	61	44	37	40	38	49	54	69	64	73	79	70
10	61	45	36	40	38	50	56	69	65	73	79	69
10	01	45	36	40	38	90	36	69	65	1 1	19	09
11	63	45	36	39	36	49	57	69	65	80	72	69
12	64	44	36	39	34	48	59	69	64	81	73	68
13	65	44	36	38	34	49	61	67	62	82	72	68
14	66	44	38	37	35	49	61	64	63	82	74	70
15	60	44	40	36	36	50	62	65	66	82	76	71
16	58	46	40	36	36	51	63	66	69	82	79	70
17	57	47	40	36	37	51	65	65	72	82	78	69
18	56	49	41	34	38	51	65	64	73	82	76	70
19	54	50	38	34	39	52	66	64	74	83	77	71
20	53	50	35	35	41	52	67	66	74	83	78	71
21	53	51	34	35	42	52	66	67	75	83	79	70
22	53	50	34	36	43	53	66	67	76	83	78	69
23	54	48	34	36	42	49	66	68	76	83	75	69
24	54	48	34	35	42	46	67	70	76	83	76	68
25	54	46	35	34	42	42	64	71	75	84	76	68
26	55	45	35	34	42	42	62	72	73	84	77	69
27	56		37	34					74	84	78	69
28		43			43	41	60	74				
28 29	55	43	39	34	44	42	60	76	74	84	79	69
	54	42	42	34		44	61	75	76	85	80	70
30 31	52 49	41	45 42	3'3 33		46 47	62	74 74	78	85 8€	79 79	70
Aver-		1	<del>                                     </del>	1								
age	60	46	38	38	38	48	59	68	71	82	79	71

## HOCKING RIVER BASIN

## HOCKING RIVER AT ATHENS, OHIO

DOCATION --At gaging station at Mill Street Bridge at Athens, Athens County, and 3½ miles downstream from Margaret Creek.

BACKORO ANALLABLE. -Chemical analyses: October 1954 to September 1955.

Water imperatures: October 1954 to September 1955.

Water imperatures: October 1954 to September 1955.

Water imperatures: Maximum, 1,089 ppm July 29; minimum, 94 ppm Reb. 7-8.

Bardness: Maximum, 580 ppm July 29; minimum, 94 ppm Reb. 7-8.

Specific conductance: Maximum alily 29; minimum, 1,089 ppm July 29; minimum, 94 ppm Reb. 7-8.

Water temperatures: Maximum 84 ppm Reb. 7 ppm Reb. 7-8.

Water temperatures: Maximum selly 1, 1,350 mitrombos July 29; minimum, freezing point on several days during December, January, and February.

Water temperatures: Maximum alily 1,350 mitrombos Topic Specific conductance of daily samples available in district office at Columbus, Onio. Records of distrainge for water pare October 1954 to September 1955 giren in WSP 1385. Flow affected by ice Jan. 29-31, Feb. 3-4, 13-14.

		lor																						
		Color	-	_	_	5		_		9	5 6	4	4			_	_	9	_					0 60 
		Hd	7.		7	7			-	-	7	7.		-	-		-	7.0	9	٠				
	Specific conduct-	ance (micro- mhos at 25°C)	923	746	811	936	902	221	249	579	583	537	714	602	470	241	478	316	376	204	400	200	200	201
	ness aco,	Non- carbon- ate	274	257	284	297	275	177	178	202	203	156	219	210	140	2 5	120	97	120	8	2 8	2.5	1 20	171
	Hardness as CaCO ₃	Calcium, mag- nesium	376	300	340	380	373	224	223	242	244	222	297	294	1 0	8 8	201	132	158	197	1 6	120	7 6	214
	Dissolved	(residue on evap- oration at 180°C)	630	512	576	639	628	352	366	394	409	356	489	481	304	150	308	197	241	161	100	503	2 4	330
er 1955		(NO _s )	3.3	3.3	4.5	3.5	4.9	4.6				2.5		4	ď	9 60	. 4	. 69	.5	-	; ;		) e	9 69
to Septemb	Fluoride	(F)	9.0	۳.	6	۳.	<u>ښ</u>	~.	87	2	2	8	٦.	•	!		2	. ~	. 67.	•	•	÷.c		
water year October 1954 to September 1955	Chloride	(CI)	99	47	49	67	63	28	59	22	24	25	38		. 7	7,1	20.	01	13	0			9	18.0
r year Oct	Sulfate	(*os)	276	250	281	262	286	168	173	194	205	157	224	211	173	69	151	96	117	8	5 5	32.	2 5	174
	Bicar-	(HCO ₃ )	122	53	89	103	117	22	26	84	200	83	88	104		8 4	2 6	40	46	ç	33	4.4	7 0	20 28
per mil	Potas-	Sium (K)	5.1	5,0	4.3	8	2.0	2.5	2,8	2.8	3.1	2,2	1.6	~	i			2	1, 7		i -	, e	4 -	2, 1
s, in parts per million,	Sodium	(Na)	52	36	33	53	25	21	21	22	21	21	31		; œ	, e	20.00	8.4	10	7.9	: 0		10	14.8
nemical analyses,	Mag-	(Mg)	35	30	31	34	35	21	23	23	23	21	28	88	-			=	14	.2	1 5	7 6	1 0	20
Chemic	Cal-	Cium (Ca)	92	12	85	97	91	22	52	29	9	22	72	7.5	47	24	. 84	34	\$	5	33	4 6	3 5	22
	Man-	nese (Mn)	1	;	;	;	;	1	-:	;	1	1	1	;		-	1	:	;			:	:	: :
		(Fe)	0.03	.05	. 12	5	.02	. 14	.02	. 11	8	.02	90.	20		3.5		6	2	8			? 8	28
		(SiO ₂ )	6.6	12	13	9.2	9.6		91	97	==	10	12	6	7.4		00	8	9.5	7				9.6
	Mean	discharge (cfs)	70.5									109							2,475					1, 282
		Date of collection	Oct. 1-14, 1954	Oct. 15-20	Oct. 21-23, 25-27.,	Oct. 28-30, Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-27, 31,	Jan. 11-20, 1955	Jan. 26-31	Feb. 1-4	Teh 5-6	Feb 7-8	Feb. 11-16	Feb. 17-23	Feb. 24-27	Feb 28-Mar 3	Man 5 7-8	Mar. 9, 1-9	Mor. 91.94	Mar. 25-31

HOCKING RIVER BASIN--Continued

HOCKING RIVER AT ATHENS, OHIO--Continued

					-				-	•		_											1
	Color	3	* 4	4	က	es	63	8	63	;	8	7	-	-		-	-	_	-	S	87	m	4
	Hd	7.3	2.5	5.	7.4		7.0	4.7	7.7	5.4	6.6	7.2	7.8	7.5	. 9	2.6	7.4	7.0	7.2		7. 6	7.3	1
Specific conduct-	ance (micro- mhos at 25°C)	209	392	525	681	999	804	910	924	1, 110	910	268	848	1,040	1.350	267	874	723	896	281	896	1, 070	703
ess co,	Non- carbon- ate	212	141	196	254	247	305	370	364	497	387	226	323	425	578	202	335	295	384	205	352	362	250
Hardness as CaCO ₃	Calcium, mag- neslum	260	160	222	296	283	344	405	410	504	403	242	377	468	280	238	378	308	420	246	429	454	300
Dissolved	(residue on evap- oration at 180°C)	410	259 259	353	472	472	292	899	662	ab 848	677	397	609	168	a 1. 089	384	628	519	406	419	705	129	493
Man- Cal- Mag- section Potas- Bicar- Soliton Chicaria Elementa Numera	(NO ₃ )	2.7	6 9	6 7	1.8	2, 1	2.0	1.8	2.1	80	2.0	2.4	1,8	۰.	67		7 7	1.1	1.4	1.4	2.	~?	2.6
T. Confedence		0.2	wi e4	! -:	~	2	~.	83	67	. {	ຕຸ	m.	87.	۳.	;	•		er,	e,	ຕຸ	e,	e,	0.2
S. S. S. S. S. S. S. S. S. S. S. S. S. S	(CI)	22	27 22	12	25	22	32	42	42	42	36	20	36	20	45	28	42	31	48	24	49	8	34
Sulfato	(SO,	214	142	195	263	251	306	362	360	525	393	222	319	421	685	195	339	296	390	211	363	372	252
Bicar-	Donate (HCO ₃ )	26	26	40	48	43	47	43	26	80	20	20	99	25	8	44	22	16	44	20	<b>8</b>	112	19
Potas-	sium (K)	2.0	 	2.1	2.3	2,5	2.7	2.4	3.2	3.3	3,3	3.0	3.0	3.6	2	4			3.4			3.3	2.9
,	(Na)	ឧទ	2 2	12	24	23	33	38	38	75	36	17	34	46	78	21	88	29	46	23	46	26	30
Mag-	nesium (Mg)	24	91 21	52	31	28	35	43	45	26	43	25	37	48	88	24	37	33	43	24	43	46	30
Cal-	cium (Ca)	25	3,40	23	67	67	80	91	96	110	90	26	88	108	120	28	90	69	86	29	101	106	12
Man -	ga- nese (Mn)	1.7	: :	:	;	0.	2.2	;	;	:	:	1.2	8	. 82	0.8	00	. 15	2.9	. 13	33	.03	8	:
	Iron (Fe)	0.01	8.5	8	6	. 29	.02	.01	10.	10.	8	.05	. 02	10.	12	90	6	.02	8	.01	8	.01	0.05
	Silica (SiO ₂ )	8.6	ກ່ອ	4.0	=	11	21	12	11	21	91	12	14	=	17	9	6.6		12	21	2	4.1	10
Méan	discharge (cfs)	656	2, 371	857	399	553	260	184	146	173	408	513	124	131	868								728
	Date of collection	Apr. 1-13, 1955	Apr. 14-20	Apr. 29-May 3	May 4-10	May 11-15, 17-20	May 21-31	June 1-17	June 18-July 5	July 6	July 7-9	July 10-15	July 16-24	July 25-28	July 29	July 30-Aug. 2	Aug. 3-12	Aug. 13-17	Aug. 18-22	Aug. 23-Sept. 4	Sept. 5-16	Sept. 17-30	Time-weighted average c

a Immediate accidity (H+), pH 7.0; July 6, 7.0 parts per million; July 29, 22 parts per million. b Potential free accidity (H+), pH 7.0; July 6, 11 parts per million. Foresents 93 percent of days and 88 percent of runoft.

## HOCKING RIVER BASIN

## HOCKING RIVER BASIN -- Continued

## HOCKING RIVER AT ATHENS, OHIO -- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at varying hours

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug,	Sept.
1	73	54	41	32	34	48	47	59	63	74	78	73
2	74	52	43	31	34	46	50	59	64	75	80	71
3	74	52	39	31	33	44	51	61	66	77	80	72 72
4	76	49	36	33	33	i	52	63	67	77	81	72
5	77	50	35	35	34	49	53	67	67	78	83	72
6	71	52	35	32	34	47	55	65	69	77	83	72
7	67	50	38	34	34	41	50	64	70	78	84	72
8	65	49	35	35	34	39	50	64	68	78	.80	70
9	66	50	34	34		41	51	62	68	78	81	70
10	66	49	36	35		41	51 52	62	67	70	80	73
11	66	49	38	35	37	50	55	62	66	71	79	73
12	67	51	38	35	33	53	56	63	66	73	73	69
13	65	52	35	34	32	52	60	62	65	75	73	67
14	73	50	34	33	33	50	58	61	63	76	73	69
15	60	51	31	33	33	51	58 56	58	61	77	73	71
16	47	54	34	34	34	50	56		62	78	73	71
17	55	53		34	34	46	58	62	66	77	74	71
18		53	33	33	33	45	59	62	69	78	76	71
19	52	53 52	31	34	36	43	63	61	72	77	77	71
20	54	51	32	34	38	45	61	64	72	77	78	71
21	53	48	32		42	50	62	65	72	76	80	69
22	55	45	32		41	45	59	69	73	78	79	69
23		47	32	-	39	50	60	69	73	78	75	71
24		47	32	} ==	39	44	60	69	73	80	72	71
25	55	46	32		39	41	60	71	73	79	71	68
26	53	43	31	36	40	43	57	68	70	79	71	67
27	57	44	31	34	41	38	54	68	70	79	73	66
28	55	42		33	45	36	54	70	69	78	74	67
29	54	43		33	45	39	57	71	70	77	76	67
30	53	43		32		41	58	70	71	76	77	67
31			40	32		44		65		77	75	
Aver-												
age	62	49	35	34	36	45	56	65	68	77	77	70

Color

## OHIO RIVER MAIN STEM

DHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA

at Ravenswood, Jackson County, 450 feet downstream from Sandy Creek, and 7,600 LOCATION. ---About 650 feet upstream from dam, lock and dam 22 (mile 220.9) eet downstream from Turkey Run

DRAINGE AREA. 39, 840 square miles.

RECORD ANALLELE. -Chemical analyses: October 1954 to September 1955.

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EXTREMENS: 1954-55. --Disable and the september 1955.

EXTREMENS: 1954-55. --Disable and the september 1957.

Bardness: Maximum, 219 ppm Aug. 1-3, 5-10; minimum, 919 ppm Mar. 1-10.

Specific conductance: Maximum daily, 711 micromhos July 10; minimum daily, 109 micromhos Feb. 28.

Water temperatures: Maximum, 87°F Aug. 5-8; minimum, 100 ppint Jan. 30

REMARKS. --Records of specific conductance of daily samples available in district office at Columbus,

No discharge records available for this Ohio.

October 1054 to Soutember 1055 Chaminal analyses

	Hd	220055	F-0-0-000		800
		က်ကိုကိုကိုက်ကိ	က်လုံလုံလုံလုံ	<u>က်တ်တ်တ်တ်</u>	တ်တ်တ်
	Specific conduct- ance (micro- mhos at 25°C)	536 454 286 327 405 429	285 285 285 364 355	311 301 201 185 226 261	333 378 327
	Total acid- ity as H ₂ SO ₄				
	CO, Non- carbon-	167 138 88 102 124 124	122 96 79 74 101	88 81 80 44 69 77 77	97 108 95
	Hardness as CaCO, Calcium, No mag- cart nesium at	174 103 115 140 145	142 116 99 93 95	107 108 73 69 86 86	122 136 118
955	Dissolved solids (residue on evap-oration at 180°C)	348 289 176 209 258 265	263 211 167 142 158 a 220	b 190 c 182 d 125 120 154	236 238 208
ember 1	Ni- trate (NO _s )	40.5.6.6.	လုတ်လုတ်လုံ လူလုတ်လုတ်	4:1:24.8	2.08
to Septe	Fluo- ride (F)	4. 2. 2. 2. 2. 2.		22242	
er 1954	Chlo- ride (Cl)	4 4 4 1 1 1 1 2 1 2 8 2 3 9 3 9	38 14 20 12 15 26	22 21 9.2 8.0	18 26 21
ar Octo	Sul- fate (SO ₄ )	165 127 . 88 . 110 1128	117 107 71 71 58 17 98	96 48 48 72	100
rater yes	Bicar- bonate (HCO ₃ )	11 18 16 17 17 17	22 25 25 25 25 25 25 25 25 25 25 25 25 2	32 32 26 26 29	28 38
Illion, w	Po- tas- sium (K)	8 8 4 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	22:12:12:22:23:23:23:23:23:23:23:23:23:23:23:23	1.56	1.1.8
s per m	So- dium (Na)	<b>2811282</b>	24 118 17.7 1.16 9.5	15 13 7.2 4.9 6.6 9.2	272
, in part	Mag- ne- sium (Mg)	81 7.7. 8.90	Q. F. D. D. D. D. D. D. D. D. D. D. D. D. D.	2. 4. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	9.8
nalyses	Cal- cium (Ca)	28 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	23 34 4 1 2 2 3 4 1 3 6 2 7 2 2 3 6 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	228828	28 88 88 88
Chemical analyses, in parts per million, water year October 1954 to September 1955	Man- ga- nese (Mn)	0.32 12.08 194 38	.55 .00 .00 .16	. 52 . 52 . 32 . 30 . 30	
ទី	Iron (Fe)	0.00	4.6.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	. 09 1.6 . 17 . 48 . 05	
	Alum- inum (A1)	0.2	191117		
	Silica (SiO ₂ )	0 2 2 2 2 2 5	7.0.0.1.0.1. 2.2.0.1.4.0	0.0.0.0.c.c.	7.9
	Tem- pera- ture (°F)				
	Mean discharge (cfs)				
- 1					

2-10, 1955 .. 11-20 .....

Dec. 1-10... Dec. 11-20. Dec. 21-30. Jan. 2-10, 11 Jan. 11-20. Jan. 21-31.

21-31 .....

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11-20.....

1-10. 1-10

Feb. Feb. Feb.

1-10.....

Oct. Nov. Nov. ę;

21-31

1-10, 1954.

21-30....

Date of collection

Includes 0.07 parts per million of zinc (Zn). Includes 0.04 parts per million of zinc (Zn).

a Includes 0.01 parts per million of zinc (Zn). b Includes 0.13 parts per million of zinc (Zn).

21, 22, 24-30

Apr. 1-10 Apr.

21-31.....

Mar. Mar. Mar.

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89 109 121 151	142	174	195	191	168	120	
112 143 154 182 182	160	200	219	204	187	141	
194 239 333 322	289	378	409 382	382 370	353 353	259	
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20.02.03	2. 2.		4.4.	e, e, e, e,	3.5	2.6	
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7.8 10 14 12	13 13	14	5 5	116	<b>4</b> 2	01	
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26.69	8 8	88	5.8	<u>.</u> .	<u>5</u> 8	0.08	
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	6.9	3.8	3.9	9.0	r. 4.	6.7	
							nt of days.
May 1-10, 1955 May 11-16, 18-20. May 21-31 June 1-3, 5-10	June 21-30	July 11-13, 15-20 . July 21-31	Aug. 1-3, 5-10 Aug. 11-20	Aug. 21-31 Sept. 1-10	Sept. 11-20 Sept. 21-30	Time-weighted average e	e Represents 98 percent of days.

## OHIO RIVER MAIN STEM--Continued

## OHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA. -- Continue 1

Temperature (°F) of water, water year October 1954 to September 1955 _Once-daily measurement at approximately 6 a. m_7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	51	46		33	40	47	58	70	74	84	78
2	74	49	46	40	33	40	47	58	70	76	84	78
3	74	50	44	40	33	40	47	60	72	75	84	78
4	74	50	44	40	33	47	46	62	72	75		78
5	74	48	44	40	33	47	50	64	72	76	87	78
6	73	50	42	45	36	47	50	65	72	78	87	78
7	70	48	40	43	33	47	50	63	72	77	87	78
8	66	47	40	43	36	47	49	66	72	80	87	78
9	67	48	41	41	36	47	50	65	72	80	85	78
10	68	49	40	40	36	47	50	65	73	82	83	78
11	68	47	40	40	36	47	50	67	73	82	83	78
12	68	49	38	40		47	52	65	73	81	80	78
13	69	47	38	40		49	53	65	73	81	80	78
14	69	48	39	38		49	56	65	72		80	78
15	69	48	41	38		49	58	63	72	83	80	78
16	64	48	40	38		48	57	65	72	82	79	78
17	59	49	40	38		48	60	63	70	83	80	78
18	59	49	40	35		46	59	63	71	1 83	81	75
19	59	50	40	36	43	46	61	63		83	80	75
20	58	50	40	35	40	47	62	63	71	84	80	75
21	59	49	36	35	41	48	63	63	71	83	81	75
22	54	50	36	36	41	48	63	63	72	81	81	74
23	54	50	37	36	41	48		63	72	82	80	75
24	54 54	48	37	37	40		63	63	73	83	77	75
25	54	48	36	36	38	48	84	66	73	84	77	74
26	55	47	36	36	38	48	63	68	73	84	80	74
27	56	47	38	34	37	42	60	68	73	84	80	74
28	56	47	39	33	39	40	60	68	73	84	80	74
29	55	46	40	33		40	60	70	73	83	80	72
30	55	47	41	32		41	60	70	73	83	80	72
31	51	==		33		42		70		84	78	12
ver- age	63	48	40	38		46	56	65	72	81	82	76

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## KANAWHA RIVER BASIN

## NEW RIVER AT EGGLESTON, VA.

		Color	2	12	2	<u>-</u>	ıo	9	ıc		0	c	2	-	15	α	5	2 6	9 6	07	8	29	4	2 6	23	20	2	12	2
		Hq	7.3	2.3	7.5	-2	7.4	7.3	2.5			8.7	7.4	-1.8	7.8	7 7	0		- '	9.	9.	7.8	r u		0	. 3	9.7	7.8	7.7
	Specific conduct-	ance (micro- mhos at 25°C)	162	141	164	164	177	152	149		132	136	123	127	127	125	3 5	1	871	111	125	116	138	3 5	3	108	131	117	121
	ness Co,	Non- carbon- ate	200	19	22	20	18	14	12	•	٠ •	7.	9	12	15	-12		2 :	3		ı,	13	٥	o u	,	13	16	17	12
	Hardness as CaCO,	Calcium, mag- nesium	74	63	72	89	67	8	9		20.	3	20	8	28	2	, w	3 5	3	£	2	29	8	3 €	2	22	65	8	28
	Dissolved solids	(residue on evap- oration at 180°C)	106	;	;	;	;	1	1		:	:	74	;	;	;	: :	l 	:	:	:	;	ď	3	:	;	1	:	;
er 1955		(NO ₃ )	6.2	;	:	1	i	1	í		1	1	2.1	1	;		: :		1	;	;	1	7	;	:	;	;	1	:
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ber 1954 t			2.4	!	1	;	;	:	;		:	;	2.8	:	:	i		!	:	:	;	!		:	:	!	1	:	1
Chemical analyses, in parts per million, water year October 1954 to September 1955	31.6	(80,	18	13	15	16	18	12	12	::	27	2	0.6	07	11	=======================================			0.0	9.5	8.8	6.7			-	12	9.6	7.7	8.0
illion, wat	Bicar-	bonate (HCO ₃ )	99	54	9	9	9	22	29		\$	8	22	22	53	2		3 6	3	22	28	22	8	3 8	3	21	28	53	54
arts per m	Potas-	sium (K)	1.6	;	!	1	1	;	:		;	!	1.4	;	:	1	1	}	;	:	;	;	-	:	;	1	:	;	;
yses, in p	100	(Na)	2.8	!	!	;	;	;	;		;	;	2.7	;	!	į	1	!	:	;	1	1	•	?	:	;	!	!	:
mical anal	Мад-	nesium (Mg)	5.3	5.1	5.9	5.2	5.4	2.0	2.0	::	7.0	2.5	4.3	8.4	4.6			,	0.4	8.2	3.9	4.1	0		٠. •	8.4	5.4	6.4	4.5
Che	Cal-	cium (Ca)	21	11	13	19	18	18	16	: :	2	16	13	97	16	81	2 5	::	<b>.</b> :	ç	2	17	ā	2 2	2	14	17	18	12
		(Fe)	0.00	8	8.	8	8	8	00	:	5	8	10.	8,	8	8	3.5	3.6	3;	2.	9.	89.	6		3	\$	.02	5	8,
	50,00	(SiO ₂ )	7.7	- -	1	;	1	:	;		:	;	7.7	:	:	1			:	:	:	:	ď	;	:	!	;	1	:
	Mean	discharge (cfs)	1,149	2,027	1,252	1,357	1,275	1,757							1,973							10, 290	9 070	,	208.6	5,748	2, 579	3,055	3,084
	-	Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-10.	00	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Web 1-10	Ech 11-90		Feb. 21-28	Mar. 1-10	Mar. 11-20	Mar. 21-31	1.10	20 T T T 20	Apr. 11-20	Apr. 21-31	May 1-10	May 11-20	May 21-31

KANAWHA RIVER BASIN--Continued

NEW RIVER AT EGGLESTON, VA. -- Continued

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Меал	į		Cal-	Mag-	;	Potas-	Bicar-		:	: i		Dissolved solids	Hard as Ca	ness CO,	Specific conduct-		
discharge (cfs)	(SiO ₂ )	Fe)	Chum (Ca)	nesium (Mg)	(Na.)	sturn (K)	bonate (HCO.)	Sulfate (SO,)	Chloride (C1)	Fluoride (F)	(NO ₂ )	(residue on evap-	Calctum,	Non-	ance (micro-	ь	Color
			]	Ì		ì						oration at 180°C)	nesium	ate	mhos at 25°C)		
2,705	:	0.00	15	4.7	:	:	99	7.1	:	1	:	:	57	==	117	7.7	2
3,017	1	8.	15	4.7	:	1	28	=	;	:	;	;	57	=	126	9.2	ø
2,177	1	8	16	4.8	;	1	28	13	;	;	!	:	8	14	132	7.7	<b>&amp;</b>
2, 188	8.5	ş	22	8.4	2.1	1.3	57	=	2.1	0.0	6.7	86	57	01	132	7.8	G
3,906	;	8.	13	4.3	;	1	2	7.0	;	;	;	1	20	9	112	9.2	6
1,709	;	8	11	5.1	:	1	20	18	1	:	;	;	2	15	138	7.7	7
•	;	6	91	8.	:	;	24	12	1	;	:	;	8	13	130	7.7	<b>-</b>
•	;	.03	13	4.7	;	;	23	12	;	;	;	;	25	80	121	5	œ
_	:	8	16	2.0	:	;	55	19	1	;	;	;	8	15	140	7.8	ю
_	;	8.	22	5.1	;	;	54	16	1	:	;	ì	86	14	130	7.7	4
_	;	8	18	5.3	;	;	55	22	;	;	;	:	67	22	149	7.7	4
1,469	:	8	18	5.2			28	21	:	:	:	:	98	22	148	7.8	
3, 594	:	0.02	18	4.8	:		28	12	:	;	:	:	29	13	132	:	27
Date of collection June 1-10, 1955 June 1-20 June 1-20 June 1-20 July 1-10 July 1-10 July 1-10 July 21-31 Aug. 71-31 Sept. 1-10 Sept. 1-10 Sept. 1-10 Sept. 1-20 Aug. 21-31	Mean discharge (cfs) (cfs) (cfs) 2,777 2,177 2,177 2,188 3,906 11,709 11,389 11,389 11,890 11,890 3,594	88 8	81116a (810 _b )	Silica Iron (SiO ₂ ) (Fe) (C) (SiO ₂ ) (Fe) (C) (C) (SiO ₂ ) (Fe) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	Silica Iron Cal- (SiO ₂ ) (Fe) Cam n (SiO ₂ ) (Fe) Cam n (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca) (Ca)	Silica Iron Cal- Mag- Sod (SiO ₂ ) (Fe) (Ca) (Mg) (Fe) (Ca) (Mg) (Mg) (Mg) (Ga) (Mg) (Mg) (Ga) (Mg) (Mg) (Ga) (Mg) 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silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (Ca) silica (	Silica Iron Cal- Mag- Sodium Potas- B (SiO ₂ ) (Fe) Claim nesium (Na) (K) (fr) (La) (Mg) (Na) (K) (K) (L) (La) (Mg) (Na) (K) (K) (L) (La) (Mg) (Mg) (Mg) (K) (Mg) (K) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg	Silica Iron cham nesium (Na) (K) (HCQ ₁ )  (SiO ₂ ) (Fe) (Ca) (Mg) (Na) (K) (HCQ ₂ )	Silica Iron cham nesium (Na) (K) (HCO ₂ ) (SiO ₂ ) (Fe) (Ca) (Mg) (Ng) (K) (HCO ₂ ) (SO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (SO ₂ ) (HCO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) (SO ₂ ) 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) (Cl) (Cl) (Fr) (NO ₃ ) (Cl) (Cl) (Cl) (Cl) (Cl) (Cl) (Cl) (Cl	Silica Iron Cal- Mag- Sodium Potas- Bicar- Salitate Chloride (SiO ₂ ) (Fe) (Ca) (Mg) (Na) (K) (HCO ₂ ) (SO ₂ ) (Cl) (Cl) (NO ₂ ) or evap- Calc (SiO ₂ ) (Cl) (NO ₂ ) (Mo ₂ ) (Mo ₂ ) or evap- Calc (Ca) (HCO ₂ ) (Mo ₂ ) (Mo ₂ ) or evap- Calc (Ca) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) or evap- Calc (Ca) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) (Mo ₂ ) 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Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -   Cal -	Silica Iron Cal- Mag- Sodium Potas- Bicar- Salfate Chloride Fluoride (Nutrate (Cal) Mag- Sodium Potas- Sulfate (Cal) (Mg) (Mg) (Cal) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg) (Mg	Silica   Iron   Cal-   Mag-   Sodium   Potas-   Bicar-   Sulfata   Silica   Iron   Cal-   Mag-   Sodium   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica 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Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Silica   Sil

## KANAWHA RIVER BASIN

## KANAWHA RIVER BASIN--Continued

## NEW RIVER AT EGGLESTON, VA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

		1	emperatu	re ( r) or	water, w	rater year	October	1994 10 9	epremoer	1999		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	45	42	39	37	47	50	60	66	75	90	75
2	79	47	41	40	42	46	51	61	65	76	79	73
3	74	39	41	40	38	43	54	62	66	75	78	73 70 71 71
4	73	42	41	42	33	48	55	60	68	76	78	71
5	73	44	39	43	36	50	53	59	68	75	77	71
		_	"	1 **	"	•	"	0.5	•		''	
6	73	43	41	40	39	49	50	65		76	77	73 74 73
7	62	48	35	39	39	44	50	65	68	75	80	74
8	59	47	35	37	39	43	51	65	64	76	77	73
9	61	47	42	39	39	49	49	63	66	76	72	73
10	63	47	43	40	39	49	55	63	65	76	73	73
		-			-	**	"	-	**			
11	65	46	34	37	39	50	55	66	67	75	73	73 72
12	68	46	36	38		54	55	63	64	72	72	72
13	71	49	40	39		51	55	63	63	72	72	71 70 69
14	69	52	40	35	32			60	63	73	71	70
15	63	48	40	37	39	49	53	63	62	76	73	69
				1							1	
16	58	50	40	34	43	51	58	64	63	75	74	71 73 73 72
17	55	54	41	34	39	48	53	65	68	76	74	73
18	53	55	43	36	35	48	56	64	70	78	73	73
19	55	55	42	40	38	46	58	66	71	77	73	72
20	52	54	35	38	43	50	60	66	71	76	74	71
		ľ	1	1								
21	53	48	34	34	42	51	60	67	72	75	76	72 73 71 72 69
22	53	46	34	37	44	52	61	68	73	76	77	73
23	50	46	38	36	44	49	59	69	72	76	76	71
24	55	47	40	37	40	49	59	69	73	76	76	72
25	56	44	40	34	38	47	57	67	72	77	75	69
			1	"	00	**	١ ٠.	٠.				•
26	56	43	35	36	38	47	55	71	70	77	75	67
27	58	40	39	35	40	44	55	69	72	77	75	67 65
28	58	43	44	32	46	44	58	70	72	75	76	69
29	56	46	45	33		46	59	72	73	77	78	69 68
30	50	41	42	32		48	59	72	73		78	69
31	46		40	32		50		65		78	77	
		<del></del>	+	- <del>"</del>	<del></del>	- 30		- "	<u> </u>		<u> </u>	
Aver- age	61	47	39	37	39	48	55	65	68	76	75	71
	L				L	L	L	<u> </u>	L	L		

## KANAWHA RIVER BASIN--Continued

NEW RIVER AT GLENLYN,

LOCATION: -- At gaging station at bridge on U. S. Highwan 460 at Glenlyn, Giles County, 0.3 mile upstream from East River, and 6.3 miles downstream from Wolf Creek. DRAIMAGE AREA.--3,768 square miles. RECORDS AVAILABLE.--Chemical analyses: April 1930 to March 1931, October 1949 to September 1950, October 1954

August 1955. EXTREMES, 1930-21. -Dissolved solids: Maximum, 94 ppm Oct. 21-31; minimum, 58 ppm Mar. 21-31. Hardness: Maximum, 80 ppm July 11-20, 21-31; minimum, 42 ppm Dec. 11-20. REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

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		Color	2	<b>~</b>	2	10	10	m	ĸ	en
		Hd	7.5	7.4	7.2	7.4	7.5	8.	4.9	7.8
	Specific conduct-	ance (micro- mhos at 25°C)	189	179	133	104	160	163	123	152
	ness CO,	Non- carbon- ate	22	17	80	7	14	14	9	11
	Hardness as CaCO _s	Calcium, mag- nesium	88	75	9	45	75	8	21	99
	Dissolved solids	(residue on evap- oration at 180°C)	113	66	78	9	93	95	83	98
		(NO ₃ )	8.4	3.2	3.6	4.2	5.0	8.4	3.5	4.4
ıgust 1955		Fluoride (F)	0.1	Τ.	٦.	τ.	Τ.	Ξ.	٦.	1,
r 1954 to A	:	(CI)	3.4	5.2	2.4	2.3	1.9	2.0	2.2	2.7
Chemical analyses, in parts per million, October 1954 to August 1955		Sulfate (SO,)	20	17	9.0	5.7	13	16	9.0	14
s per milli	Bicar-	bonate (HCO ₃ )	81	71	63	47	74	72	55	29
es, in part	Potas-	sium (K)	1.6	1.6	1.1	1.3	1.2	1.1	1.4	1.3
ical analys		Sodium (Na)	5.1	4.8	8.2	1.9	2.1	2.4	2.2	3.8
Chem	Mag-	nesium (Mg)	7.4	6.1	4.2	3.1	6.0	6.3	3.9	5.8
	Cal-	cium (Ca)	23	2	11	13	20	19	14	17
		(Fe)	0.02	8.	\$	.03	80.	8.	8	00.
		(SiO ₂ )	5.0	6.3	7.2	6.4	6.0	0.9	5.6	7.5
	Mean	discharge (cfs)	1,350	1,890	10,100	33, 200	2,100	2,920	8, 990	2,130
		Date of collection	Oct. 12, 1954	Nov. 10	Jan. 1, 1955	Apr. 15	May 9	June 21	July 13	Aug. 4

## KANAWHA RIVER BASIN -- Continued

## NEW RIVER AT GLENLYN, VA .-- Continued

LOCATION. --On the right bank at the Glenlyn steam electric plant of the Appalachian Electric Power Company at Glenlyn, Giles County.

DRAINAGE AREA. --3,768 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1950 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 80°F July 29; minimum, freezing point on several days during January and February.

EXTREMES, 1951-55. --Water temperatures: Maximum, 84°F June 28, 1952; minimum, freezing point on several days during winter months.

REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

Temperature (°F) of water, water year October 1954 to September 1955

			emperatu.	re (F) OI	water, w	ater year	October .	1904 10 36	pumer	1900		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Àpr.	May	June	July	Aug.	Sept.
1	75	46	40	42	32	42	44	54	61	72	76	74
2	75	46	]	44	34	44	47	55	62	73	77	73
3	74	42	42	43	35	41	47	58	63	75	78	
4	75	42	40	45	32	41	47	60	64	74	79	
5	75	42	40	45	32	45	48	61	64	76	79	1
												ļ
6	75	42		45	33	47	47	60	66	75	78	1
7	69	42	39	43	36	40	45	60	69	74	78	75
8	62	44	36	40	36	40	44	61	66	74	77	75
9	61	46	39	41	36	41	45	59	62	72	76	74
10	63	45	40	41	38	44	47	61	62	70	72	75
-7		1				••			-	1	٠-	1
11	66	45	38	40	40	45	53	62	60	72	72	75
12	68	46	38	40	32	47	50	61	62	72	72	75
13	69	47	39	36	36	48	51	60	60	70	70	73
14	70	47	40	33	38	47	53	59	59	67	65	71
15	68	48	42	34	40	48	48	56	58	71	72	72
	•••			, ,,	•	1 =0	1	1	} ••			1
16	58	49	40	34	35	46	50	58	60	73	73	78
17	58	51	40	33	37	45	52	60	64	74	76	76
18	55	54	42	34	35	44	53	60	67	75	71	75
19	54	55		34	36	43	52	60	68	78	72	74
20	52	56	39	33	37	43	54	62	66	75	73	74
		)		"	١	1 30	0.7	٧	**		''	1
21	52	53	36	32	39	45	58	64	69	75	76	69
22	52	47	36	33	42	49	56	66	70	77	76	69
23	53	47	35	35	42	44	56	67	70	76	76	69
24	53	46	38	34	39	44	56	66	70	76	74	69
25	54	45	40	33	35	44	56	65	68	76	74	69
	•	1	1 30		""	177	1	1	1		'*	1
26	56	43	40	32	36	43	53	63	66	76	73	66
27	56	41	40	36	37	39	51	65	67	78	72	62
28	56	40	43	32	42	36	51	66	67	79	73	63
29	56	42	46	33		40	54	68	69	80	74	63
30	53	39	45	32		40	55	68	71	77	73	66
31	48		46	36		42		65		76	76	
		<del>                                     </del>					<u> </u>	- 30		-,-	<del>                                     </del>	<del></del>
Aver-	62	46	40	37	36	43	51	62	65	74	75	71
age	V2	1 20	40	) "	30	23	91	02	05	14	16	•1

# KANAWHA RIVER BASIN--Continued

# NEW RIVER AT BLUESTONE DAM STILLING BASIN, NEAR HINTON, W. VA.

LOCATION .-Temperature recorder on right bank 1,000 feet upstream from gaging station, 0.9 mile upstream from Greenbrier River, and 2.2 miles upstream

from Hinton, Summers County.

MARINAGE AREA.-4, 604 square miles.

RECARS AREA.-4, 604 square miles.

RECARS AREA.-4, 604 square miles.

RECARS AREA.-4, 604 square miles.

RECARS AREA.-4, 604 square miles.

RETREMES 1954-55.--Water temperatures: Maximum, 82 F Aug. 1-2, 4-5, 7; minimum, 34 F Dec. 25-27.

EXTREMES 1953-55.--Water temperatures: Maximum, 82 F Aug. 5, 1953; minimum, 34 F On several days during December 1953 and December 1954.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1984 to September 1955 /Continuous ethyl alcohol-actuated thermograph?

1		1	1																																١	
	mber	mim	92	75	22	18	75	7.4	74	. 5	4.	4	7.4	ť	2 5	7	2	2	72	7.5	2	72	2	4.6	2 2	. 6	25	12		*	2	23	23	71	:	73
	September	max	77	92	22	77	9/	76	2.7		Ę	72	7.	2 2		2	2	2	52	2	2	2	22	22	22		2 2	22		2	2	22	44	72	:	7
	ust	min	8	80	80	8	18	5	1 2	: 2	5 8	20	7.5	2 :	* :	* ;	<u>4</u>	₹.	74	7.	74	20	72	74	7.	7.	. 2	22	ě	2	5	22	92	77	22	76
	August	max	82	82	81	85	82	2	5 2	2		8	2	2 2	2 5	2	22	c.	74	7	74	74	7	22	22	2	22	92	92	2 ;	16	92	77	18	28	77
	July	min	72	25	7.	92	75	34	2 2	2.5	2	1	82	2 5	2 5	2	<b>Z</b> (	?	73	2	7.	74	75	44	77	. 82	28	28		2 ;	62	48	8	80	8	76
	Ju	max	72	7.	92	92	92	44	:	- 82	2 2	82	44	: 2	2 2	2	2	*	75	74	7	2	12	42	28	82	2 2	28	5	D 1	8	8	8	8	8	22
	June	min	7.1	69	89	89	69	9	8 5	2 2	2 6	69	80	9,6	8	8 ;	65	2	2	8	2	65	61	87	89	5	2	7.1	:	<b>=</b> 1	=	7	7	71	:	89
	J.	max	17	71	69	69	69	ï	: :	: 5	2.02	69	80	9 6	200	9	99	4	63	49	65	67	67	8	72	2	2	22	2	7	=	12	72	72	1	69
	May	min	28	99	62	63	5	84	2	9	: 5	8	67	5 6	70	8	29	60	25	63	63	65	65	67	89	69	89	69	5	2 ;	2	2	72	7.	7	8
	M	max	9	62	63	65	65	88	8 8	8		89	ď	8 8	8 8	8	8 6	ç	65	65	655	99	67	8	69	20	20	7.1	i	= 1	2	73	74	75	72	89
graph/	111	min	47	49	21	25	24	23	2	2 6	25	22	ű	3 8	3 2	8	8:	7	75	7	22	28	90	2	62	63	2	61	-	3	200	25	28	24	:	20
thermo	April	max	48	25	25	25	75	85	8	8 8	2	75	25	5 5	2 5	5 !	2.5		29	22	228	8	91	63	8	2	8	83	- 5	3 :	9	28	82	28	:	22
tuated	cch	min						_																											44	;
cohol-ac	March	max																																_	47	;
ethyl al	lary	mim																																		
Continuous ethyl alcohol-actuated thermograph	February	max																																		
/Cont	ary	min	44	43	43	43	43	4	4.5	48	5	4	42	1 :	; ;	;	2 6	ŝ	39	88	38	88	37	37	37	:	35	:	8	3	!	:	;	;	:	;
	January	max	46	44	43	43	4	45	46	48	48	45	44	: 5	2:	<b>;</b> :	₹ 5	9	39	39	38	88	38	24	33	: :	37	: 1	3	5	:	:	1	:	:	1
	nber	min	46	45	4	43	43	42	42	40	40	40	Ş	3 8	8 8	8 6	200	0	37	38	39	39	39	38	38	32	32	34	3	5 :	4	35	35	36	4	39
	December	max	47	46	45	44	43	43	4	43	\$	40	40	2 0	9 8	8 6	200	5	38	39	39	38	39	39	39	37	33	32	3	5 :	ç	£	36	4	47	40
	mber	min	58	22	25	2	20	67	8	47	4	46	47	; ;		; ;	÷.	ę.	48	48	49	20	25	2	22	25	22	25	Š	3 :	8	84	48	41	::	20
	November	max	56	55	22	Z	21	20	49	48	42	47	47	: :			ş. 4	P	49	23	20	25	25	22	22	25	22	25	ę	3 5	3	20.0	48	48	:	2
	per	mim	7.2	22	2	73	7	2	2	22	72	72	70	2 5	2 2	2 8	2 8	8	67	62	9	8	28	28	8	22	22	24	i i	5 :	ò	22	22	22	88	65
	Octo	weu	73	22	75	75	76	92	7	2	72	7.5	7.5	: :	: =	: :	= =	=	69	67	62	8	8				22	24	5,7	5 1	6	6	22	24	22	98
	Dav	Cay.	1		3	4	2	9	7.	8	9.	10	11	12.	13.	14	15		16.	17	18	19.	20	21	22	23	24	25	26.				RZ	30.		Average

## KANAWHA RIVER BASIN -- Continued

## KNAPP CREEK AT MARLINTON, W. VA.

LOCATION. --At city water plant, at Marlinton, Pocahontas County, 1 mile upstream from mouth and 2 miles downstream from gaging station.
DRAINAGE AREA. --108 square miles (at gaging station).
RECORDS AVAILABLE, --Water temperatures: October 1946 to September 1955.
EXYREMES, 1954-55. --Water temperatures: Maximum, 77°F July 16-17, 19, 21; minimum, freezing point on many days during November to March.
EXTREMES, 1946-55. --Water temperatures: Maximum, 82°F July 24, 1952; minimum, freezing point on many days during winter monthe.
REMARKS. --Discharge records for gaging station near Marlinton, W. Va. for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Máy	June	Juiy	Aug.	Sept.
1	68	36	33	35	33	35	37	63	58	68	75	68
2	66	40	34	36	33	37	38	62	59	70	74	67
3	66	35	33	34	32	38	45	57	60	72	75	66
4	68	32	33	33	32	39	42	60	60	73	75	62
5	68	34	32	36	32	42	45	61	62	71	76	66
6	66	34	32	36	32	40	45	60	64	72	74	66
7	60	34		35	34	36	45	57	66	72	73	67
8	52	32	32	34	33	34	37	59	62	73	72	65
9	56	34	32	34	32	36	42	60	61	73	70	64
10	54	32	32.	33	33	39	47	60	62	73	69	65
11	58	33	32	33	35	43	45	61	64	75	73	65
12	56	34	32	32	32	43	44	59	65	72	72	64
13	61	36	33	32	32	44	45	61	63	74	69	62
14	61	38	33	32	33	42	46	58	60	72	68	62
15	65	38	33	32	34	42	48	49	60	75	70	64
16	55	42	32	32	32	43	48	52	61	77	70	66
17	48	44	32	32	33	38	50	56	64	77	68	65
18	46	45	33	32	35	36	53	54	64	75	69	68
19	45	50	33	32	34	38	53	54	65	77	70	63
20	43	47	32	32	34	39	55	58	63	76	66	64
21	45	45		32	34	38	55	59	65	77	72	64
22	46	44		34	35	46	55	60	64	75	72	64
23	44	44	33	32	38	35	55	62	63	76	71	65
24	45	42	34	32	35	37	53	63	64	73	69	65
25	45	40	33	32	33	35	54	64	65	72	69	64
26	47	42	33	32	34	38	51	67	62	74	68	62
27	48	32	33	32	35	32	49	64	63	75	68	60
28	50	34	34	32	36	32	50	68	62	76	68	62
29	48	35	35	32		34	52	69	65	75	68	60
30	45	32	34	32		33	52	67	68	75	69	61
31	40		35	32		33		63		76	68	
Aver-	54	39	. 22	22	94	90	40	60	60	74	71	64
age	54	38	a 33	33	34	38	48	60	63	74	71	

a Includes estimated temperature, 32° on missing days.

## KANAWHA RIVER BASIN ~- Continued

## KANAWHA RIVER AT CABIN CREEK, W. VA.

LOCATION. --On left bank at the Cabin Creek steam electric plant of the Appalachian Electric Power Company at Cabin Creek, Kanawha County.

DRAINAGE AREA. --8,661 square miles.

RECORDS AVAILABLE. --Water temperatures:

EXTREMES, 1954-55. --Water temperatures:

EXTREMES, 1950-55. --Water temperatures:

Maximum, 92°F Aug. 1-4, 6; m'uimum, 34°F Feb. 13.

EXTREMES, 1950-55. --Water temperatures:

Maximum, 92°F Aug. 1-4, 6, 1955; minimim,

freezing point Feb. 10, 1951.

REMARKS. --Temperature records furnished by the Appalachian Electric Power Company. Measurements are made at the cooling water intake of the steam-driven electric generating plant

Temperature (°F) of water, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	47	43	44	35	48	47	60	78	82	92	86
2	77	47	43	45	36	49	46	63	75	82	92	85
3	77	46	42	44	35	48	52	63	76	83	92	84
4	78	44	42	44	35	48	54	63	74	83	92	83
5	79	45	41	44	35	48	54	67	75	85	91	83
6	78	44	40	46	37	49	54	68	76	85	92	83
7	77	44	39	45	39	46	54	71	77	85	91	83
8	77	45	38	45	40	44	54	71	75	85	90	83
9	75	45	38	42	40	44	54	71	74	84	89	81
10	76	45	38	42	41	46	56	70	74	83	88	83
11	76	46	38	42	40	50	56	70	73	84	87	81
12	76	46	37	42	37	50	57	70	72	84	83	81
13	77	46	37	40	34	50	59	70	70	84	82	82
14	77	47	37	40	35	50	60	66	69	83	83	82
15	71	47	38	40	39	51	59	62	69	83	85	82
16	58	48	39	38	37	52	59	65	69	83	87	83
17	57	48	39	37	37	50	59	65	70	83	84	83
18	56	50	39	37	38	50	60	66	71	84	83	83
19	56	50	39	37	38	48	62	68	74	86	84	82
20	-56	51	38	37	41	48	64	69	77	87	84	82
21	55	51	37	37	42	50	65	69	78	88	82	83
22	55	52	37	37	44	51	65	71	78	88	83	83
23	56	51	36	36	42	51	64	71	78	89	85	83
24	56	50	36	37	42	49	65	73	81	87	86	82
25	66	48	37	37	43	48	63	74	79	88	84	81
26	58	46	37	38	43	47	61	75	79	69	84	81
27	58	47	38	38	44	44	58	75	79	89	85	81
28	58	47	38	36	45	43	57	76	79	90	85	81
29	58	45	41	36		43	58	76	80	90	86	81
30	56	43	43	35		44	60	77	80	90	85	82
31	52		43	35		44		77		90	87	
Aver- age	66	47	39	40	39	48	58	69	75	86	87	82

# KANAWHA RIVER BASIN--Continued

KANAWHA RIVER AT CHARLESTON, W. VA.

LOCATION.--Temperature recorder at gaging station on left bank at old lock 6, at Charleston, Kanawha County, 1.0 mile upstream from Davis Creek, 14 miles downstream from Elk River.

GOMINGA AREA. -10, 419 square miles downstream from Elk River.

BRINGA ANAILABLE.--Water temperatures: March 1953 to September 1955.

RECORDS AVAILABLE.--Water temperatures: March 1953 to September 1955.

EXTREMES 1953-55.--Water temperatures: Maximum, 93 F Aug. 7; minimum, 36 F Feb. 1, 1955.

EXTREMES 1953-55.--Water temperatures: Maximum, 99 F Aug. 7, 1955, minimum, 36 F Feb. 1, 1955.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (*F) of water, water year October 1954 to September 1955

	. 1	1																															١	
	nber	min	85	82	82	82	98	84	83	82	80	81	81	81	81	80	80	79	80	8	80	80	81	81	80	80	43	80	28	28	43	78	:	81
	September	max	88	98	84	98	87	98	82	84	84	82	82	8	85	8	82	18	82	81	81	82	82	83	82	83	8	8	8	82	83	81	:	83
	nst	min	88	68	90	68	06	90	90	87	83	84	98	82	84	82	83	84	84	84	82	84	83	83	83	84	8	84	82	82	82	98	ŝ	82
	August	max	06	85	85	92	92	92	93	91	84	98	88	81	98	84	82	8	98	8	82	98	82	82	82	98	82	98	98	87	88	88	2	88
	July	ujæ	80	81	81	83	83	83	83	82	83	84	84	83	84	82	84	84	84	84	84	84	82	88	87	84	98	98	87	85	87	87	200	84
	J.	max	82	25	84	84	86	98	87	87	87	82	82	98	98	98	88	88	81	88	98	88	88	88	8	8	81	88	90	8	68	88	3	48
	June	ujæ	75	22	1.1	78	75	92	22	74	74	74	74	74	72	2	69	89	2	2	72	74	42	92	78	43	20	18	20	42	28	13	:	42
	Z,	max	42	2	42	8	78	80	81	77	92	76	92	28	7.4	72	2	20	72	72	92	16	7.2	8	81	8	28	8	18	82	82	82	١	82
	May	uţuı	19	61	63	89	99	1.9	67	88	8	22	2	٤	12	2	67	\$	65	8	8	2.9	69	2	-	72	72	74	15	92	77	92	9.	69
	M	max	64	8	64	99	67	67	89	20	22	74	11	73	2	12	20	67	89	8	88	89	70	E	73	73	74	92	92	11	22	77		11
graph/	April	min	48	49	21	23	23	22	22	22	8	25	57	51	22	20	19	19	29	29	29	25	65	99	98	98	8	65	62	19	9	8	:	29
thermograph	ďΨ	max	49	5	23	24	22	22	22	24	22	57	29	20	26	5	62	62	81	19	64	99	98	8	67	67	99	99	82	62	5	61	:	09
ctuated	March	mfn	46	49	22	20	51	51	8	47	47	\$	49	51	25	25	25	23	25	5	2	49	20	25	25	22	25	20	48	47	42	47	4.7	20
cohol-a	Ma	max	49	22	20	21	21	21	51	48	49	49	21	25	25	25	24	53	54	25	21	20	25	25	25	25	25	21	20	48	48	48	49	51
Continuous ethyl alcohol-actuated	February	min	38	32	33	38	88	39	88	33	4	#	43	43	40	40	40	4	41	4	#	42	44	47	48	46	46	48	46	45	-	;	:	42
tinuous	Febr	max	#	41	40	8	33	39	8	8	4	43	4	44	43	4	4	4	41	4	42	44	47	48	8	48	47	47	47	46	:	;	:	43
Con (Con	January	mfn	43	46	47	48	47	47	48	48	46	46	47	4	\$	44	4	45	44	41	43	42	43	42	42	#	40	40	\$	4	40	40	37	44
	Jan	max	9	47	\$	48	48	48	49	48	48	47	47	47	4	46	45	45	4	#	#	4	4	44	44	44	44	4	45	4	4	4	41	46
	December	nim	48	48	47	47	47	47	46	46	45	42	43	42	42	43	42	42	42	43	43	42	43	4	42	42	43	42	43	4	42	41	43	44
	Dece	max	20	48	48	48	48	48	48	48	47	47	45	\$	44	4	43	42	43	43	43	43	43	43	43	43	#	43	44	42	46	4	44	45
	November	mim	22	24	29	22	49	48	49	20	49	20	49	2	48	2	20	20	20	22	51	23	53	23	25	54	25	51	20	49	49	20	:	21
	Nove	max	22	99	54	25	51	20	20	27	27	52	52	25	27	22	53	53	52	25	24	24	99	32	22	26	22	54	25	26	21	51	:	53
	ober	min	74	92	28	72	82	75	74	73	2	12	7.2	72	74	74	2	64	29	29	8	57	22	22	24	22	57	28	28	20	09	20	24	98
	Octobe	max	L		62	_			78		23			_	_	_	_	74						29	29	28	20					5	20	88
	Dow	Day	1	2		4.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23.	24	25	26	27	28	29	30	31	Average

KANAWHA RIVER BASIN--Continued

# MISCELLANEOUS ANALYSES OF STREAMS IN KANAWHA RIVER BASIN IN NORTH CAROLINA

		Color		L- 0				es	
		Hď		6.9	?		9.9	6.9	
	Specific conduct-	ance (micro- mhos at 25°C)		28.3	200		35.4	47.2	
	Hardness as CaCOs	Calcium, Non- mag- carbon- nesium ate		0 6			2	<u> </u>	
i	Hard as Ca	Calcium, mag- nesium		æ <u>=</u>			12	9	
	Dissolved solids	(residue on evap- oration , at 180°C)		a 23	3.5		35	a 36	
ber 1955		(NO ₃ )		0.9	•		3.9	۲.	
to Septem	:	(C1) (F) (NO ₅ )		0.1	•			0.1	
tober 1954	:	Chioride (C1)	EFFERSON	0.5	6.1	RUMPLER	1.2	1.5	
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Sulfate (SO ₄ )	SOUTH FORK NEW RIVER NEAR JEFFERSON	1.7	a i	NORTH FORK NEW RIVER AT CRUMPLER	5.9	1.3	
	Bicar-	bonate (HCO ₃ )	NEW RIVE	2:	=	CK NEW RI	80	52	
arts per m	Potas-	stum (K)	JTH FORK	0.7	°.	ORTH FOF		1:1	
lyses, in p	:	(Na)	SOE	0.0	6.3	F		2.5	
mical ana	Mag-	nesium (Mg)		4.0	*:		1.1	1.4	
Che	Cal-	ctum (Ca)		2.5	2.0		3.0	4.2	
		Fe)		0.03	*			90.0	
		(SiO ₂ )		8.1	9			=	
	Dis-	charge (cfs)		1	<del>6</del> 01		4, 720	101	instituents.
		Date of collection		May 12, 1955	Sept. 14	,	Apr. 14, 1955	Sept. 15	a Sum of determined constituents.

a Recorder stopped Oct. 18 to Nov. 17, Nov. 23 to Dec. 27, Dec. 31 to Jan. 9, once-weekly measurements shown.

### BIG SANDY RIVER BASIN

## JOHNS CREEK NEAR VAN LEAR, KY.

LOCATION: --Temperature recorder at gaging station on right bank 100 feet upstream from Long Branch, 0.3 mile upstream from Daniels Creek, 0.5 mile downstream from Daniels Creek, 0.5 mile downstream from Daniels Southeast of Van Lear, Johnson County.

DRAINAGE AREA. --2008 Square miles.

RECORDS AVAILABLE. --Water temperatures: April 1954 to September 1955.

RECORDS AVAILABLE. --Water temperatures: April 1954 to September 1955, minimum, 34°F Feb. 2, 6, 1955.

RETAINSES. -- Water temperatures: April 1954 to September 1955 minimum, 36°F peb. 2, 6, 1955.

REMARKS. -- Flow regilated by Dewey Recervoir. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

REVISIONS. --WSP 1350: Revised water temperatures for water year 1953-54 are given herewith: Apr. 19, minimum, 56°F; Apr. 30, maximum 60°F.

Temperature (°F) of water, water year October 1954 to September 1955 (Continuous ethal alcohol-actuated thermograph)

l																																	-	
	September	min	26	8	8	8	63	62	62	61	61	19	8	29	28	20	8	29	20	8	g 	26	8	8	<b>2</b>	6	8	8	6	6	20	6	:	61
	Septe	max	65	65	4	65	65	49	25	63	83	62	62	8	8	8	61	61	<b>.</b>	5	5	9	5	5	5	<b>5</b>	19	6	31	62	62	19	:	62
	August	min	09	62	61	62	19	61	<del>1</del> 9	19	19	19	61	61	61	61	61	61	6	8	8	2	64	8	65	2	63	64	\$	64	2	64	64	62
	Aug	max	63	69	67	63	8	29	2	8	63	8	8	2	63	62	62	8	\$	65	65	65	99	67	2	65	65	65	65	65	99	99	99	65
	July	min	64	65	65	65	65	65	65	92	99	99	99	65	65	64	4	63	8	8	8	62	62	62	62	62	8	63	62	62	62	62	62	25
	2	max	64	65	99	99	70	65	65	99	99	99	99	99	65	65	65	64	63	64	8	8	8	63	83	63	8	63	63	63	63	63	63	64
	9	mim	65	65	64	64	64	2	99	65	65	65	65	99	65	65	65	99	99	99	99	67	67	83	64	64	65	65	88	99	2	2	;	65
	June	max	65	65	65	25	64	67	67	8	65	65	99	99	99	99	99	99	99	99	67	61	11	61	25	65	69	99	99	8	99	64	;	98
	Α.	nim	57	57	28	21	8	9	61	19	19	91	61	19	61	61	61	61	91	61	20	9	61	62	62	62	82	62	62	63	8	65	65	61
	May	max	88	8	9	49	9	63	99	63	65	49	19	61	65	62	61	61	61	61	91	61	89	69	49	69	49	62	83	65	65	- 62	65	63
apu/	_	min	20	20	20	48	20	51	20	48	49	48	21	21	25	25	22	25	72	Z	22	26	22	26	26	26	28	57	21	28	22	22	:	53
Continuous ethyl alconol-actuated thermograph,	April	max	51	21	25	21	21	51	21	21	21	21	52	25	53	53	24	54	75	22	3	28	99	28	<u>8</u>	24	86	88	8	28	24	88	;	55
lated th	<u>.</u>	mim	45	45	45	46	46	46	44	45	45	47	47	41	48	48	49	49	48	48	49	49	49	22	8	22	2	20	20	49	20	49	20	48
nor-act	March	max	45	45	46	46	47	47	46	45	41	47	47	48	48	<del>6</del>	49	49	49	49	64	49	20	20	22	<u>۔</u> چ	20	20	2	20	20	2	- 19	48
nyi aico	Į.	min	35	34	37	38	35	34	36	32	32	37	33	3	37	32	37	37	36	88	<del>-</del>	40	40	39	39	42	42	43	43	43	;	;	;	38
nons et	February	max	35	38	38	38	39	39	37	33	37	38	39	39	37	38	38	38	39	<b>4</b>	41	41	40	41	41	42	43	43	44	45	!	1	1	40
Contin	ry	min		;	:	-	;	;	:	:	;	42	4:	40	40	42	40	40	40	40	39	39	39	38	88	38	40	39	38	37	36	36	35	:
	January	max		;	3.2	!	1	;	;	-	1	45	42	4	£	43	43	40	42	<del>2</del>	40	39	40	39	38	41	41	42	49	40	37	36	39	:
	er	min		;	:	:	-	1	:	:	;	;	-1	:	;	:	;	-	;	-	:	;	-	;	;	;	;		;	41	41	41	;	:
i	December	max	a47	-	-	-	:	a 42	-;	;	:	;	-;	-	a42	:	;	-	;	-	:	a 41	-	;	;	_ ;	:	-	42	43	42	44	-	
	Der	min	1	-	;	;	;	- 1	:	;	:	;		-	-	;	;	-	;	21	_	_	51	21	- '	+	-	;	:	;		-	-	:
	November	max	a 55	-	-;	;	;	-	-;	52	:	1	:	:	-	;	22	- ;	;	22	22	21	21	21	:	:	-	-	:	;	a47	-	1	<b> </b>
	le.	min	Т	_	150	- 19	61	99	-	ď	9			- 9	- 9	- 8	60 a	29	29	-	:	-		-	-	-	 :	-	:	-	-	-	-	<u> </u>
	Octobe	max	-	62	_	_	-	_		-	 09			_	-	_	_	9		<u>.</u>	_ :	<u>.</u>		<u>.</u>	:	:	_ 6	-:		-:		-	 ;	<b> </b>
	_	-	ᆫ	_	_	_	_	_	_	_	_			_		_		_	_	:	:	÷	-	· :	:	:	38	-	_	_			:	L
		Day	1	2	3	4	5	6	7.	8	9.	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25a59	26	27	28	29	30.	31	Average

### BIG SANDY RIVER BASIN -- Continued

### TUG FORK AT KERMIT, W. VA.

LOCATION.--At city water plant, at Kermit, Mingo County, three quarters of a mile down-stream from Wolf Creek, and 3 miles downstream from gaging station.
DRAINAGE AREA.--1,274 square miles at water plant, 1,185 square miles at gaging station.
RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1955.
EXTREMES, 1946-55.--Water temperatures: Maximum, 85°F July 3; minimum, 35°F Feb. 13-14.
EXTREMES, 1946-55.--Water temperatures: Maximum, 90°F July 29, 1949; minimum, freezing point Feb. 5, 1947, Nov. 26, 1950, Jan. 10, Feb. 8-9, 1951.
REMARKS.--Discharge records for Tug Fork near Kermit, W. Va. for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

1         73         48         43         45         37         51         52         63         68         77           2         75         48         44         46         40         50         54         63         70         78           3         74         43         43         48         40         50         57         64         70         85           4         73         41         40         49         39         50         55         67         70         80           5         75         43         40         50         40         52         57         67         75         79           6         76         44         40         54         42         55         58         68         69         80           7         63         45         38         50         44         49         58         67         70         82           8         58         47         37         47         45         47         52         69         66         81           10         62         48         40         45         44 <td< th=""><th>Day</th><th>Oct.</th><th>Nov.</th><th>Dec.</th><th>Jan.</th><th>Feb.</th><th>Mar.</th><th>Apr.</th><th>May</th><th>June</th><th>July</th><th>Aug.</th><th>Sept.</th></td<>	Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
3         74         43         43         48         40         50         57         64         70         85           4         73         41         40         49         39         50         57         64         70         85           5         75         43         40         49         39         50         57         67         70         80           6         76         44         40         54         42         55         58         68         69         80           7         63         45         38         50         44         49         58         67         70         82           8         58         47         37         47         45         47         52         69         66         81           9         61         48         40         47         44         49         54         67         68         80           10         62         48         40         43         45         53         60         70         69         82           11         64         46         40         43         45 <t< td=""><td>1</td><td></td><td></td><td></td><td></td><td>37</td><td>51</td><td>52</td><td>63</td><td>68</td><td>77</td><td>82</td><td>72</td></t<>	1					37	51	52	63	68	77	82	72
3         74         43         43         48         40         50         57         64         70         85           4         73         41         40         49         39         50         55         67         70         80           5         75         43         40         50         40         52         57         67         75         79           6         76         44         40         54         42         55         58         68         69         80           7         63         45         38         50         44         49         58         67         70         82           8         58         47         37         47         45         47         52         69         66         81           10         62         48         40         47         44         49         54         67         68         80           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         35         <					46	40	50	54	63	70	78	82	70
4         73         41         40         49         39         50         55         67         70         80           5         75         43         40         50         40         52         57         67         70         80           6         76         44         40         54         42         55         58         68         69         80           7         63         45         38         50         44         49         54         67         68         69         80           8         58         47         37         47         45         47         52         69         66         81           9         61         48         40         45         44         50         57         65         68         78           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         35         57         62         70         65         80           14         70         49         44         41         <	3		43	43	48	40	50	57	64	70	85	83	69
5         75         43         40         50         40         52         57         67         75         79           6         76         44         40         54         42         55         58         68         69         80           7         63         45         38         50         44         49         58         67         70         82           8         58         47         37         47         44         49         54         67         68         80           10         62         48         40         47         44         49         54         67         68         80           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         39         56         60         67         67         81           13         69         43         41         44         35         57         62         70         65         80           15         69         50         43         41         37	4	73	41	40	49	39	50	55	67	70	80	82	72
7         63         45         38         50         44         49         58         67         70         82           8         58         47         37         47         45         47         52         69         66         81           9         61         48         40         47         44         49         54         67         68         80           10         62         48         40         45         44         50         57         65         68         78           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         35         55         60         67         67         81           13         69         48         41         44         35         57         62         70         65         80           14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37		75	43	40	50	40		57	67	75	79	83	74
7   63   45   38   50   44   49   58   67   70   82   8   58   47   37   47   45   47   52   69   66   81   9   61   48   40   47   44   49   54   67   68   80   10   62   48   40   45   44   50   57   65   68   78    11   64   46   40   43   45   53   60   70   69   82   12   67   47   41   43   39   56   60   67   67   81   13   69   48   41   44   35   57   62   70   65   80   14   70   49   44   41   35   56   60   68   65   80   15   69   50   43   41   37   56   60   63   64   81    16   58   51   42   40   40   55   62   65   68   79   17   58   52   43   39   43   53   63   68   70   81   18   57   54   43   41   43   50   64   66   75   81   19   55   56   43   40   45   51   66   67   75   81   20   52   58   41   39   46   51   68   68   76   81   21   53   54   40   39   48   54   68   70   78   82   22   53   50   38   39   43   50   64   67   73   77   83   24   54   49   39   39   48   50   64   77   73   77   83   25   57   45   38   40   45   51   64   72   74   80   26   57   45   38   40   45   52   60   72   72   83   26   57   45   38   40   45   51   64   72   74   80   26   57   45   38   40   45   52   60   72   72   83   27   59   43   38   41   46   46   56   77   73   77   73   28   58   43   42   37   50   45   56   77   73   77   28   59   57   43   47   37     44   58   77   73   77   30   54   42   48   36     44   58   77   73   77   30   54   42   48   36     44   58   77   73   77   30   54   42   48   36     44   58   77   73   77   30   54   42   48   36     44   58   77   73   77   31   31   30   45     44   58   77   73   77   31   30   50   54   42   48   36     44   58   77   73   77   81	6											82	72
8         58         47         37         47         45         47         52         69         66         81           9         61         48         40         45         44         49         54         67         68         80           10         62         48         40         45         44         49         54         67         68         80           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         39         56         60         67         67         81           13         69         48         41         44         35         57         62         70         65         80           14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37         56         60         63         64         81           16         58         51         42         40         40	7				50	44	49	58	67	70	82	82	72
9   61   48   40   47   44   49   54   67   68   80   10   62   48   40   45   44   50   57   65   68   78    11   84   46   40   43   45   53   60   70   69   82   12   67   47   41   43   39   56   60   67   67   81   13   69   48   41   44   35   57   62   70   65   80   14   70   49   44   41   35   56   60   68   65   80   15   69   50   43   41   37   56   60   63   64   81    16   58   51   42   40   40   55   62   65   68   79   17   58   52   43   39   43   53   63   68   70   81   18   57   54   43   41   43   50   64   66   75   81   19   55   56   43   40   45   51   66   67   75   81   20   52   58   41   39   46   51   68   68   70   75   81   21   53   54   40   39   48   54   68   68   70   76   82   22   53   50   38   39   40   46   51   64   72   74   80   24   54   49   39   39   48   50   64   73   77   83   25   55   48   39   40   46   51   64   72   74   80   26   57   45   38   40   45   52   60   72   72   82   27   59   43   38   41   46   46   56   77   71   83   28   58   43   42   37   50   45   56   77   71   83   29   57   43   44   48   36     44   58   77   73   77   83   30   54   42   48   36     44   58   77   73   77   83				37		45	47	52	69	66	81	82	71
10         62         48         40         45         44         50         57         65         68         78           11         64         46         40         43         45         53         60         70         69         82           12         67         47         41         43         39         56         60         87         67         81           13         69         48         41         44         35         57         62         70         65         80           14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37         56         60         63         64         81           16         58         51         42         40         40         55         62         65         68         79           17         58         52         43         39         43         53         63         68         70         81           18         57         54         43         41         43				40	47	44	49	54	67	68	80	78	71
12 67 47 41 43 39 56 60 67 67 87 81 13 69 48 41 44 35 57 62 70 65 80 14 70 49 44 41 35 56 60 68 65 80 15 69 50 43 41 37 56 60 63 64 81 16 58 52 43 39 43 53 63 68 70 81 19 55 56 43 40 45 51 66 67 75 81 19 55 56 43 40 45 51 66 67 75 81 20 52 58 41 39 46 51 68 68 76 81 22 53 54 49 39 46 51 68 68 76 81 22 53 54 49 39 46 51 68 68 77 73 77 83 26 57 45 38 40 45 51 66 77 73 77 83 26 57 45 38 40 45 51 66 77 73 77 83 26 57 45 38 40 45 51 66 77 73 77 83 26 57 45 38 40 45 51 66 77 73 77 83 29 57 43 38 40 45 51 66 77 73 77 83 29 57 43 38 41 46 56 67 72 72 82 82 75 59 43 38 40 45 52 60 72 72 82 82 77 59 43 38 41 46 56 67 77 72 83 29 57 43 44 37 77 77 81		62	48	40	45	44	50	57	65	68	78	77	73
13         69         48         41         44         35         57         62         70         85         80           14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37         56         60         68         64         81           16         58         51         42         40         40         55         62         65         68         79           17         58         52         43         39         43         53         63         68         70         81           18         57         54         43         41         43         50         64         66         75         81           19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         48         54         68         70         76         81           21         53         54         40         39         48	11											80	72
13         69         48         41         44         35         57         62         70         65         80           14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37         56         60         63         64         81           16         58         51         42         40         40         55         62         65         68         79           17         58         52         43         39         43         53         63         68         70         81           18         57         54         43         41         43         50         64         66         75         81           19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         46         51         68         68         76         75         81           21         53         54         40         39	12									67	81	78	70
14         70         49         44         41         35         56         60         68         65         80           15         69         50         43         41         37         56         60         63         64         81           16         58         51         42         40         40         55         62         65         68         70         81           17         58         52         43         39         43         53         63         68         70         81           18         57         54         43         41         43         50         64         66         75         81           19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         46         51         68         68         76         81           21         53         54         40         39         48         54         68         70         76         82           22         53         50         38         39									70		80	75	67
15         69         50         43         41         37         56         60         63         64         81           16         58         51         42         40         40         55         62         65         68         79           17         58         52         43         39         43         53         66         66         75         81           18         57         54         43         41         43         50         64         66         75         81           19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         46         51         68         68         70         76         81           21         53         54         40         39         48         54         68         70         76         82           22         53         50         38         39         50         57         65         72         78         83           23         54         49         39         48					41	35	56	60	68	65	80	73	67
17		69	50	43	41	37	56	60	63	64	81	78	70
17         58         52         43         39         43         53         63         68         70         81           18         57         54         43         41         43         50         64         66         75         81           19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         46         51         68         68         70         75         81           21         53         54         40         39         48         54         68         70         78         82           22         53         50         38         39         50         57         65         72         78         83           23         54         49         39         39         48         50         64         73         77         83           24         54         49         39         39         48         50         64         73         76         81           25         55         48         39         40	16								65		79	77	68
18     57     54     43     41     43     50     64     66     75     81       19     55     56     43     40     45     51     66     67     75     81       20     52     58     41     39     46     51     68     68     76     78     81       21     53     54     40     39     48     54     68     70     76     82       22     53     50     57     65     72     78     83       23     54     49     37     41     50     54     67     73     77     83       24     54     49     39     39     48     50     64     73     76     81       25     55     48     39     40     46     51     64     72     74     80       26     57     45     38     40     45     52     60     72     72     83       27     59     43     38     41     46     56     74     72     83       28     58     58     43     42     37     50     45     56     77     72						43	53	63	68	70	81	80	69
19         55         56         43         40         45         51         66         67         75         81           20         52         58         41         39         46         51         68         68         76         81           21         53         54         40         39         48         54         68         70         78         82           22         53         50         38         39         50         57         65         72         78         83           23         54         49         39         39         48         50         64         73         77         83           24         54         49         39         39         48         50         64         72         74         80           25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         282           27         59         43         38         41         46		57		43	41	43	50	64	66	75	81	80	71
20         52         58         41         39         46         51         68         68         76         81           21         53         54         40         39         48         54         68         70         78         82           22         53         50         38         39         50         57         65         72         78         83           24         54         49         37         41         50         54         67         73         77         83           24         54         49         39         39         48         50         64         73         76         81           25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         82           27         59         43         38         41         46         46         56         74         72         83           28         58         43         42         37         50		55		43		45	51	66	67	75	81	79	70
22         53         50         38         39         50         57         65         72         78         83           23         54         49         37         41         50         54         67         73         77         83           24         54         49         39         39         48         50         64         73         76         81           25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         82           27         59         43         38         41         46         46         56         74         72         83           28         58         43         42         37         50         45         56         77         72         83           29         57         43         47         37          44         58         77         73         82           30         54         42         48         36 <td></td> <td>52</td> <td>58</td> <td>41</td> <td>39</td> <td>46</td> <td>51</td> <td>68</td> <td>68</td> <td>76</td> <td>81</td> <td>80</td> <td>68</td>		52	58	41	39	46	51	68	68	76	81	80	68
22         53         50         38         39         50         57         65         72         78         83           23         54         49         37         41         50         54         67         73         77         83           24         54         49         39         39         48         50         64         73         76         81           25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         82           27         59         43         38         41         46         46         56         74         72         83           28         58         43         42         37         50         45         56         77         72         83           29         57         43         47         37          44         58         77         73         82           30         54         42         48         36	21											80	71
23         54         49         37         41         50         54         67         73         77         83           24         54         49         39         39         48         50         64         73         76         81           25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         82           27         59         43         38         41         46         46         56         74         72         83           28         58         43         42         37         50         45         56         77         72         83           29         57         43         47         37          44         58         77         73         82           30         54         42         48         36          41         60         73         77         81												79	73
24     54     49     39     39     48     50     64     73     76     81       25     55     48     39     40     46     51     64     72     74     80       26     57     45     38     40     45     52     60     72     72     82       27     59     43     38     41     46     46     56     74     72     83       28     58     43     42     37     50     45     56     77     72     83       29     57     43     47     37      44     58     77     73     82       30     54     42     48     36      41     60     73     77     81											83	79	72
25         55         48         39         40         46         51         64         72         74         80           26         57         45         38         40         45         52         60         72         72         82           27         59         43         38         41         46         56         74         72         83           28         58         43         42         37         50         45         56         77         72         83           29         57         43         47         37          44         58         77         73         82           30         54         42         48         36          41         60         73         77         81	24				39							76	69
27 59 43 38 41 46 46 56 74 72 83 28 58 43 42 37 50 45 56 77 72 83 29 57 43 47 37 44 58 77 73 82 30 54 42 48 36 41 60 73 77 81	25	55	48	39	40	46	51	64	72	74	80	75	71
27         59         43         38         41         46         46         56         74         72         83           28         58         43         42         37         50         45         56         77         72         83           29         57         43         47         37          44         58         77         73         82           30         54         42         48         36          41         60         73         77         81	26											76	69
28 58 43 42 37 50 45 56 77 72 83 29 57 43 47 37 44 58 77 73 82 30 54 42 48 36 41 60 73 77 81												75	68
29   57   43   47   37     44   58   77   73   82   30   54   42   48   36     41   60   73   77   81						50						75	71
30 54 42 48 36 41 60 73 77 81												77	68
			42		36		41	60	73	77	81	78	72
	31	47		47	36		49		68		81	75	
Average 82 48 41 42 43 51 60 69 71 81		62	48	41	49	43	51	60	69	71	81	79	70

### SCIOTO RIVER BASIN

OLENTANGY RIVER NEAR DELAWARE, OHIO

LOCATION.--Temperature recorder at gaging station on left bank, 500 feet upstream from highway bridge, 1,000 feet downstream from Delaware Dam, 1,300 feet upstream from Pensylvania Raliroad bridge, and 4 miles north of Delaware County.

DANIAGA AREA, --387 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1955, 387 Feb. 22-27.

RETYREMES, 1954-55.--Water temperatures: Maximum, 78°F May. 11; minimum, 38°F Feb. 22-27.

EXTREMES, 1954-55.--Water temperatures: Maximum, 93°F June 29, 1952; minimum, freezing point on several days during some winter months.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

1																			_															_
	September	min	7.1	7	71	71	- 2	71	71	7.1	21	-	69	88	89	69	69 —	69	69	69	69	69	99	69	69	69	89	53	67	67	99	99	4	8
ĺ	Sep	max	73	74	74	74	74	74	7.	73	73	2	71	7	7	7	72	72	45	72	72	71	20	20	2	20	2	53	88	69	89	89	:	5
	August	min	72	2	72	72	72	72	72	72	72	2	73	73	42	74	73	74	23	2	<u>ب</u>	43	73	2	2	25	72	22	72	73	72	12	22	73
	Aug	max	74	75	74	75	75	75	75	75	7.	7.4	78	22	92	75	16	76	92	92	2.0	92	22	23	7	22	22	75	74	73	22	23	74	45
	July	min	29	67	67	67	89	89	89	89	89	89	89	89	89	69	69	89	89	69	69	69	69	69	2	2	و م	71	7	77	7	2	72	69
	J.	max	70	2	20	69	20	69	69	20	69	11	11	11	7	12	69	20	71	20	25	72	73	73	72	71	42	4.	74	72	74	75	75	11
	96	min	65	65	65	99	99	99	99	65	65	65	65	65	;	;	1	;	;	;	;	;	;	;	;	;	:	ł	;	;	99	99	;	:
aph7	June	max	70	2	2	20	20	20	20	67	89	67	67	89	;	;	;	;	;	;	;	;	;	;	;	1	;	;	;	;	20	69	;	1
rmogr		min	61	9	9	09	61	61	- 19	61	61	29	æ	83	8	83	65	49	æ	25	2	8	64	25	4	64	75	34	\$	65	65	65	65	63
ated the	May	max	62	62	83	63	63	63	63	63	64	49	64	49	64	67	67	29	67	67	67	88	89	99	67	- 67	65	33	89	99	88	99	69	65
continuous ethyl alcohol-actuated thermograph7	11	min	40	46	46	44	46	49	47	47	4.1	84	20	20	25	23	25	20	25	g	24	54	26	22	28	29	28	53	9	09	9	09	;	52
yl alcoi	April	max	53	22	22	25	22	57	20	22	26	28	22	29	28	57	25	29	90	ß	99	99	57	22	9	9	9	20	9	9	61	62	:	57
ous eth	ų	mim	35	37	42	43	42	39	35	36	39	42	43	44	44	45	47	47	47	46	46	46	46	45	45	45	43	11	39	39	39	39	39	42
continu	March	max	37	42	43	49	47	42	39	40	47	43	44	44	45	42	47	47	47	47	46	46	46	46	45	45	45	43	41	39	38	39	40	44
	H	min	$\vdash$	_	35			_	_	-	34			36	-	_	_		32	_					33	33	 	33	33	34	:	1	-	35
attach	February	max n	-	-	37	-	-	_	_	_	36		-	37		-			36	_	_	-	_	_	_	33	-		34		1	1	-	35
Recorder with temperature attachment,	$\vdash$	min n	36	36	36	37	37	37	37	38	38	38	37	37	36	36	35	35	35	35	32	35	35	35	35	35	36	35	35	36	36	36	36	36
ith tem	January	max n	36	38	37	37	37	37	37	38	38		38	37	37	36	36	36	36	36	35	36	35	35	36	36	36	38	36	36	36	37	37	36
rder w	r.	H	L	_	39	_			_	_	36	_	_	36	_	_			36			_	-	_	_	36	_		_	_	-	36	_	36
Æeco	December	rx min	=	9	39	68	- 66			_	37			36		_			36				- 92	- 98	_ 96	36	 8	38	- 88		- 88	36	36	37
	-	n max	_		48				940	_		_		9					_		_	45	_	_	_	45			43		_			45
	November	x mtn	-		_	_	_	_	_	_	_	_	_	_	_	_	_		46			_	_	_	_	45 - 4	_			_	_		-	46 4
	Ž	n max	_	_	3 49	_	_		_	_	47	_		3 47	_	-	_	_	_	_	_	_	_	_	_	_			44		_	_	-	L
	October	x min	┝	_	99 - 99	_	_		_	_	62	_	_	- 63	_	_		_	- 28							- 54	_	_	_		_	25	_	69 0
	-	max	ļ		99				_	_	: 8					_	¥ :		20	_				_	_	: 26						53		
		Day	1	2	3	4	5	9	7	8	9.	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	36.	27	28.	29	30	31	Average

## SCIOTO RIVER BASIN--Continued

## SCIOTO RIVER AT CHILLICOTHE, OHIO

LOCATION. --Temperature recorder at gaging station on right bank at north end of Chillicothe, Ross County, 450 feet downstream from Bridge Street Bridge.
DRAINAGEA RREA.--3.847 square miles.
RECORNS ANEALS. --Chequate miles and the station of September 1951.
Water temperatures: October 1950 to September 1951.
Water temperatures: October 1950 to September 1951.
RYREMERS. 1964-55. --Water temperatures: Maximum, 89°F Aug. 2.3; minitum, 33°F on several days during Janyary and February.
RYREMERS, 1954-55. --Water temperatures: Maximum, 89°F July 14, 1954, Aug. 2,3,1955; minimum, freezing point on several days during December 1950, REMERS, 1954-55. --Water temperatures: Maximum, 89°F July 14, 1954, Aug. 2,3,1955; minimum, freezing point on several days during December 1950, REMERS, 1954-56. --Water temperatures: Maximum, 1954 to September 1955 given in WSP 1385.

Thun. Temperature ('F) of water, water year October 1954 to September 1955
Recorder with temperature attachment, continuous other articles attachment, continuous other actuals to be actual attachment.

ı	1	I																															1	Į
Sentember		E E	22	2	2	=	22	73	22	2	21	r P	2	88	67	89	2	72	23	2	29	2	72	21	2	=	89 —	67	65	9	67	8		20
Sent		max	76	7	22	29	77	42	92	74	75	92	72	72	F	<u>ت</u>	75	77	11	77	13	92	75	22	<b>4</b> 1	2	F	69	67	20	69	69	:  ;	75
tan.		e e	82	8	84	82	98	8	82	80	80	08	8	7	2	75	74	78	75	1	28	£	43	44	12	4	74	23	74	75	75	25	:	28
August	!	max	88	88	88	88	88	88	87	82	83	84	83	8	8	28	11	8	81	85	25	83	83	8	28	2,8	- 78	77	77	79	8	21		82
Inly		min	92	11	8	78	80	80	76	78	77	12	22	92	18	28	2	78	62	77	77	7.	18	8	8	82	8 —	81	82	79	11	80	3	28
Ē		max	81	8	84	83	84	84	80	83	8	18	78	43	80	85	85	82	8	79	62	83	83	84	82	84	84	82	84	82	82	84	3	82
Time		min	89	69	2	7	2	22	22	2	2	69	89	67	8	65	92	67	2	72	74	2	75	12	12	2	73	77	77	11	72	22	:	2
	•	max	73	74	75	74	92	77	75	72	7.1	2	20	69	88	67	20	73	75	77	79	78	8	20	28	11	92	73	74	75	11	80	:	74
mermogra		min	61	62	ន	65	67	67	99	99	64	63	64	84	64	63	63	99	67	92	65	89	69	7	2	2	2	20	22	74	22	69	٥	67
Continuous ethyl alcohol-actualed thermograph/		max	64	99	88	20	11	11	2	69	67	65	99	65	64	64	88	7	12	70	2	73	73	22	7	2	22	75	92	76	75	ឌ្	2	2
no-actu		ri ii	46	48	8	25	22	22	24	22	21	23	28	26	28	8	8	22	09	19	63	62	63	5	*	63	61	29	22	26	22	9	:	57
lyl alcohol		max.	48	20	53	\$	22	24	24	2	55	22	24	9	8	9	9	61	6	64	8	65	64	65	65	5	63	61	29	29	62	64		59
March	3	諨	45	46	45	45	48	47	42	44	44	44	47	20	48	47	47	48	48	48	47	4.1	47	48	46	46	46	43	41	40	41	42	#	46
Contin		max	47	47	46	48	20	20	47	45	45	41	2	5	21	48	48	21	20	48	48	8	20	25	48	47	46	46	43	41	44	44	a l	48
inment,	â	min	83	S	83	33	34	34	34	32	35	36	36	35	35	34	35	36	36	36	36	98	38	88	8	88	36	40	40	43	:	1		36
re attachme	T COT	max	33	33	33	33	34	34	32	35	36	37	37	36	35	35	36	36	37	37	98	38	39	88	39	88	\$	40	43	45	;	1		37
mperatu		min	39	38	38	38	40	42	42	40	9	es S	38	8	88	38	37	36	36	35	32	<b>%</b>	34	\$	34	*	32	34	33	33	æ	ដូរ	3	37
/Hecorder with temperature attachment,		шах	38	8	38	40	42	43	43	42	40	40	38	38	38	38	38	37	37	36	35	35	35	35	32	32	35	35	35	33	33	88	3	37
/Recorder	i i	min	41	41	40	38	38	38	8	32	35	96	32	36	36	36	37	37	37	38	88	37	36	35	8	32	36	38	37	38	40	48	a a	37
	238	max	41	41	41	40	40	38	38	38	36	36	36	36	36	37	37	37	38	38	38	8	37	98	32	36	37	37	38	40	4	#	7	38
November		min	48	47	45	45	45	45	45	46	47	47	46	47	46	46	41	47	48	22	25	21	48	48	47	46	45	43	42	41	41	4	:	46
North	P. C.	max	20	48	47	46	45	46	47	47	48	48	47	48	48	48	48	48	20	23	25	22	21	49	48	47	48	45	43	42	41	#		47
100	2 I	nin	72	5	74	75	92	69	64	62	63	92	67	69	7	22	99	63	61	9	57	22	22	75	54	22	95	28	28	26	22	22	3	62
9		X	74				78			4	65		F		_	_				_	8	24	æ	_								22	┙	92
	Day		1	2	3	4	5	6.	7	8		10	11	12	13	14	15	16	17.	18	19	Z0	21	22.	200	24	25	26	27	28	29.	30.	эт	Average

### SCIOTO RIVER BASIN -- Continued

### SCIOTO RIVER AT HIGBY, OHIO

LOCATION. --At gaging station at highway bridge three-quarters of a mile downstream from Walnut Creek and 1½ miles north of Higby, Ross County.

DRAINAGE AREA. --5, 129 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1953 to September 1955.

Sediment records: October 1953 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 83°F on several days during August; minimum, freezing point on many days during December, January, and February.

Sediment concentrations: Maximum daily, 1,400 ppm Mar. 22; minimum daily, 1 ppm

Sept. 3-10. Sept. 3-10.

Sediment loads: Maximum daily, 112,000 tons Mar. 22; minimum daily, 1 ton Sept. 3-10. EXTREMES, 1953-55. --Water temperatures: Maximum, 83°F on several days during August 1955; minimum, freezing point on many days during most winter months. Sediment concentrations: Maximum daily, 2,130 ppm July 21, 1954; minimum daily, 1 ppm

Seqt. 3-10, 1955.
Seqt. 3-10, 1955.
Sediment loads: Maximum daily, 112,000 tons Mar. 22, 1955; minimum daily, 1 ton
Sept. 3-10, 1955.
REMARKS.--Flow slightly regulated by O'Shaughnessy, Griggs, and Delaware Reservoirs.
Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 7 a.m./

Day Oct. Nov. Dec. Jan. Feb. Mar. May July Aug. Sept. Apr. 43 72 65 70 R 66 RO 43 នព 33 45 50 RR _-Aver-age

### SCIOTO RIVER BASIN--Continued

### SCIOTO RIVER AT HIGBY, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			nueu seum	ii	ar October		Tilibel 1999		
- 1		October			November			December	
	Mean		sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	na∈ M	Tons
1	charge	concen-	per	charge	concen-	per	charge	corcen-	per
(	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	309	6	5	451		17	581	2	3
2	362	10	10	451	1 <u>4</u> 10	12	588	3	5
3	346	7	6	425	16	18	581	2	3
4 [	430	7	8	451	16	19	554	5	7
5	609	9	15	456	16	20	534	3	4
ا ،	560	10						3	
6	502	12	15 16	490 490	18 13	24 17	502 473	3	4
8	554	12	18	468	12	15	446	9	11
9	502	8	11	468	5	6	446	6	7
10	456	11	14	462	7	9	456	2	2
	410	12		484	3	4	400	3	4
11	490	11	13 14	484 484	2	3	462 456	7	9
13	495	ii	15	478	4	5	440	5	6
14	567	9	14	468	6	8	456	3	4
15	708	12	23	451	4	5	484	10	13
1.0	0.40							_	_
16 17	940 908	18 17	46 42	456 456	3 4	4 5	508 534	5 7	7 10
18	958	15	39	468	4	5	820	45	100
19	780	11	23	502	7	9	780	21	44
20	686	13	24	508	8	11	740	8	16
	01.0	į							
21 22	616 581	12 12	20 19	514 502	8 10	11 14	724 637	10 13	20 22
23	554	12	18	484	13	17	602	15	24
24	521	5	7	478	15	19	602	10	16
25	468	8	10	495	14	19	560	8	12
. 1			_						
26 27	456 468	4 3	5 4	521 534	10 6	14 9.	521 502	3 6	4 8
28	478	12	15	534	2	3	574		e 65
29 [	502	7	9	567	4	6	1,650	274	s1,570
30	478	6	8	588	2	3	5,250	440	6, 240
31	462	9	11				1 77101		9,370
							7,710	450	
Total.	17, 156		497	14,584		331	30, 173		17,614
Total.				14,584	February	331			
	17, 156	 January	497		February		30, 173	 March	17, 614
1	7, 280 5, 250	January 195 94	3,830 1,330	700 1,260	11	21 e 350	30, 173 23, 600 20, 300	Morch 517 415	32,900 22,700
1 2 3	7, 280 5, 250 4, 040	January 195 94 57	3,830 1,330 622	700 1,260 1,820	11  148	21 e 350 728	23, 600 20, 300 18, 400	March 517 415 265	32,900 22,700 13,200
1	7, 280 5, 250 4, 040 3, 590	January 195 94 57 52	3,830 1,330 622 504	700 1,260 1,820 1,210	11  148 80	21 e 350 728 261	23,600 20,300 18,400 15,800	March 517 415 265 224	32,900 22,700 13,200 9,560
1 2 3	7, 280 5, 250 4, 040	January 195 94 57	3,830 1,330 622	700 1,260 1,820	11  148	21 e 350 728	23, 600 20, 300 18, 400	March 517 415 265	32,900 22,700 13,200
1 2 3 4 5	7, 280 5, 250 4, 040 3, 590	January 195 94 57 52	3,830 1,330 622 504 1,150	700 1,260 1,820 1,210 1,190	11  148 80	21 e 350 728 261 154	23, 600 20, 300 18, 400 15, 800 26, 400	March 517 415 265 224	32,900 22,700 13,200 9,560
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650	January 195 94 57 52 99 211 196	3,830 1,330 622 504 1,150 2,880 3,520	700 1,260 1,820 1,210 1,190 10,700 20,000	11  148 80 48 1,300 998	21 e 350 728 261 154 s 47, 700 s 58, 400	23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400	Merch 517 415 265 224 1,200 651 411	32, 900 22, 700 13, 200 9, 560 s 90, 400 55, 200 32, 600
1 2 3 4 5 6 8	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050	January 195 94 57 52 99 211 196 250	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110	700 1,260 1,820 1,210 1,190 10,700 20,000 10,900	11  148 80 48 1,300 998 306	21 e 350 728 261 154 s 47,700 s 58,400 9,000	23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900	Mirch 517 415 265 224 1,200 651 411 292	32, 900 22, 700 13, 200 9, 560 s 90, 400 55, 200 32, 600 14, 100
1 2 3 4 5 6 7 8 9	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490	January 195 94 57 52 99 211 196 250 154	3,830 1,330 622 504 1,150 2,880 3,520 6,110 3,110	700 1,260 1,820 1,210 1,190 10,700 20,000 10,900 7,240	11  148 80 48 1,300 998 306 183	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900	Mirch 517 415 265 224 1,200 651 411 292 233	32, 900 22, 700 13, 200 9, 560 8 90, 400 55, 200 32, 600 14, 100 6, 860
1 2 3 4 5 6 8	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050	January 195 94 57 52 99 211 196 250	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110	700 1,260 1,820 1,210 1,190 10,700 20,000 10,900	11  148 80 48 1,300 998 306	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900 8, 190	Mirch 517 415 265 224 1,200 651 411 292	32, 900 22, 700 13, 200 9, 560 8 90, 400 55, 200 32, 600 14, 100 6, 880 4, 640
1 2 3 4 5 6 7 8 9 10	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840	January 195 94 57 52 99 211 196 250 154 83	3,830 1,330 622 504 1,150 2,880 3,520 6,110 3,110 1,310	700 1, 260 1, 820 1, 210 1, 190 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140	11 148 80 48 1,300 998 306 183 141	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 8, 190 8, 570	Mirch 517 415 265 224 1.200 651 411 292 233 210	32, 900 22, 700 13, 200 9, 560 8 90, 400 55, 200 32, 600 14, 100 6, 860 4, 640 5, 410
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 3, 420	January 195 94 57 52 99 211 196 250 154 83	3,830 1,330 622 504 1,150 2,880 3,520 6,110 3,110 1,310 915 508	700 1, 260 1, 820 1, 220 1, 210 1, 190 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 940	11 	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900 8, 190 8, 570 10, 900	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318	32, 900 22, 700 13, 200 9, 560 8 90, 400 55, 200 32, 600 14, 100 6, 880 4, 640 5, 410 9, 380
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 3, 420 2, 820	January 195 94 57 52 99 211 196 250 154 83 77 55	3,830 1,330 622 504 1,150 2,880 3,520 6,110 3,110 1,310 915 508	700 1,260 1,820 1,210 1,190 10,700 20,000 10,900 7,240 6,290 9,140 9,140	11 	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 8, 190 8, 570 10, 900 13, 200	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293	32,900 22,700 13,200 9,560 8 90,400 55,200 32,600 14,100 6,880 4,640 5,410 9,360 10,400
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 3, 420 2, 820 2, 490	January 195 94 57 52 99 211 196 250 154 83 77 55	3,830 1,330 504 1,150 2,880 3,520 6,110 3,110 1,310 915 508 304 235	700 1,260 1,280 1,210 1,210 1,190 20,000 10,900 7,240 6,290 9,140 9,940 9,140 7,240	11 	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920 1,060	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900 8, 190 8, 570 10, 900 10, 900 10, 900	Mirch 517 415 265 224 1.200 651 411 292 233 210 234 318 293 189	32,900 22,700 13,200 9,560 890,400 55,200 32,600 14,100 6,860 4,640 5,410 9,360 10,400 5,560
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 3, 420 2, 820	January 195 94 57 52 99 211 196 250 154 83 77 55	3,830 1,330 622 504 1,150 2,880 3,520 6,110 3,110 1,310 915 508	700 1,260 1,820 1,210 1,190 10,700 20,000 10,900 7,240 6,290 9,140 9,140	11 	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 8, 190 8, 570 10, 900 13, 200	Mrch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159	32,900 22,700 13,200 9,560 890,400 55,200 32,600 14,100 6,880 4,640 5,410 9,380 10,400 5,560 4,340
1	7, 280 5, 250 4, 040 3, 590 6, 650 9, 050 5, 840 4, 400 3, 420 2, 820 2, 170 1, 850	January 195 94 57 52 99 211 196 250 154 83 77 55 40 35 33	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 508 304 235 193	700 1, 260 1, 280 1, 210 1, 210 20, 000 10, 900 7, 240 6, 290 9, 140 7, 240 9, 940 9, 140 7, 250 5, 530	11 	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 960 s 2, 570	30, 173 23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 17, 900 10, 900 8, 190 10, 900 13, 200 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10,	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159	32, 900 22, 700 13, 200 9, 560 8 90, 400 55, 200 32, 600 14, 100 6, 880 4, 640 5, 410 9, 360 10, 400 5, 560 4, 340 4, 400
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 440 3, 420 2, 820 2, 170 1, 850	January 195 94 57 52 99 211 196 250 154 83 77 55 40 35 33	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 3, 110 915 508 304 235 193	700 1,260 1,280 1,210 1,210 1,190 20,000 10,900 7,240 6,290 9,140 9,940 9,940 7,240 5,530 5,720	11 	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 806 s 2, 570 14, 900	30, 173  23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 8, 190 8, 570 10, 900 13, 200 10, 900 10, 900 9, 540 6, 670	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159	32,900 22,700 13,200 9,560 8 90,400 55,200 32,600 14,100 6,880 4,640 5,410 9,360 10,400 5,560 4,340 4,400 2,740
12345	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 170 1, 850 1, 430	January 195 195 195 195 197 57 52 99 211 196 250 154 83 77 55 40 35 33 21 12 13	3, 830 1, 330 622 5, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 235 193	700 1,260 1,280 1,210 1,210 10,700 20,000 7,240 6,290 9,140 9,940 9,140 7,240 5,530 5,720 10,300	11 148 80 48 1,300 998 306 183 141 232 174 78 54 54 54 141 535 175	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 8 2, 570 14, 900 4, 870	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900 8, 190 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10,	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159	32, 900 22, 700 13, 200 29, 760 8, 96, 400 55, 200 32, 600 14, 100 6, 860 4, 640 5, 410 9, 360 10, 400 5, 560 4, 340 4, 400 2, 740 1, 480
1	7, 280 7, 280 5, 250 4, 040 3, 590 4, 310 6, 650 9, 050 7, 490 5, 840 4, 400 3, 420 2, 820 2, 170 1, 850 1, 860 1, 430 1, 280	January 195 94 57 52 99 211 196 250 154 83 77 55 40 35 33 21 12 13	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 504 225 193 105 54 50 38	700 1, 260 1, 280 1, 210 1, 190 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 140 7, 240 5, 530 5, 720 10, 300 10, 300 9, 140	11  148 80 48 1,300 998 306 183 141 232 174 78 54 54 141 535 175	21 e 350 728 261 154 s 47, 700 s 55, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 806 8 2, 570 14, 900 4, 870 2, 890	30, 173  23, 600 20, 300 18, 400 15, 800 28, 490 31, 400 29, 400 10, 980 8, 190 8, 570 10, 900 13, 200 10, 100 9, 540 6, 670 5, 340 6, 290	Mirch 517 415 285 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102	32,900 22,700 13,200 3,560 8 90,400 55,200 32,600 14,100 6,880 4,640 5,410 9,360 10,400 5,560 4,340 4,400 2,740 1,480 1,730
12345	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 170 1, 850 1, 430	January 195 195 195 195 197 57 52 99 211 196 250 154 83 77 55 40 35 33 21 12 13	3, 830 1, 330 622 5, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 235 193	700 1,260 1,280 1,210 1,210 10,700 20,000 7,240 6,290 9,140 9,940 9,140 7,240 5,530 5,720 10,300	11 148 80 48 1,300 998 306 183 141 232 174 78 54 54 54 141 535 175	21 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 8 2, 570 14, 900 4, 870	30, 173 23, 600 20, 300 18, 400 15, 800 26, 400 31, 400 29, 400 17, 900 10, 900 8, 190 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10, 900 10,	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159	32, 900 22, 700 13, 200 29, 760 8, 96, 400 55, 200 32, 600 14, 100 6, 860 4, 640 5, 410 9, 360 10, 400 5, 560 4, 340 4, 400 2, 740 1, 480
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 440 3, 420 2, 820 2, 170 1, 850 1, 430 1, 120	January 195 195 197 57 52 99 211 196 250 154 83 77 755 40 35 33 21 11 17 7	3, 830 1, 330 622 52, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 225 193 105 54 50 322	700 1,260 1,282 1,210 1,210 1,190 20,000 10,900 7,240 6,290 9,140 9,940 9,940 5,530 5,720 10,300 10,300 9,140 8,190	11 	210 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 8 2, 570 14, 900 4, 870 2, 890 1, 840	30, 173  23, 800 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 17, 900 10, 900 13, 200 10, 900 10, 100 9, 540 6, 670 5, 340 6, 290 4, 980 12, 600	Mrch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98	32,900 22,700 13,200 9,560 890,400 55,200 32,600 14,100 6,880 4,640 5,410 9,380 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 s 37,000
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 170 1, 850 1, 430 1, 190 1, 190 1, 190	January 195 94 57 52 99 211 196 250 250 154 83 77 55 33 21 12 13 11 7	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 508 304 235 193 105 54 50 38 22 22	700 1,260 1,820 1,210 20,000 10,700 20,000 10,900 7,240 6,290 9,140 7,240 9,940 9,140 7,240 10,300 10,300 10,300 9,140 8,190	11 	21 e 350 728 261 154 s 47, 700 s 58, 400 9,000 3,580 2,390 5,700 4,670 1,920 1,060 8,2,570 14,900 4,870 2,890 1,700 s 27,700	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 8, 190 10, 900 13, 200 10, 900 10, 100 9, 540 6, 670 5, 340 6, 220 4, 960 12, 600 29, 600	Mirch 517 415 285 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98	32, 900 22, 700 13, 200 9, 560 8 90, 400  55, 200 32, 600 14, 100 6, 880 4, 640  5, 410 9, 380 10, 400 5, 560 4, 340  4, 400 2, 740 1, 480 1, 730 1, 310  s 37, 000 112, 000
1	7, 280 5, 250 4, 040 3, 590 6, 650 9, 050 7, 490 5, 440 3, 420 2, 820 2, 170 1, 850 1, 430 1, 190 1, 190	January 195 195 57 52 99 2111 198 250 154 83 77 555 40 35 33 211 117 7 8 8 6	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 504 235 193 105 54 50 38 22 21 23 31	700 1, 260 1, 280 1, 210 1, 210 1, 210 1, 210 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 940 7, 240 5, 530 10, 300 10, 300 9, 140 8, 190 8, 760 17, 700 22, 000	11 148 80 48 1,300 998 306 183 1841 232 174 774 754 54 141 535 175 117 83	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920 1,060 806 82,570 14,900 4,870 2,890 1,840	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 17, 900 10, 900 13, 200 10, 900 10, 100 9, 540 6, 670 5, 340 6, 290 4, 980 12, 600 29, 600 34, 200	Mrch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1,400	32,900 22,700 13,200 9,560 8 90,400 55,200 32,600 14,100 6,860 4,400 5,410 9,360 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 s 37,000 112,000 51,000
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 170 1, 860 1, 120 1, 120 1, 120 1, 120 1, 120 1, 1060 1, 080 1, 080 1, 080	January 195 94 44 57 52 99 211 196 250 154 83 77 55 40 35 33 21 12 13 11 7 8 8 6 6 7	3, 830 1, 330 622 1, 150 2, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 235 193 105 54 50 38 22 21 23 17	700 1,260 1,280 1,210 1,190 10,700 20,000 10,900 7,240 6,290 9,140 7,240 5,530 5,720 10,300 9,140 8,190 8,760 17,700 22,000 23,900	11 148 80 48 8 1,300 998 306 183 141 232 174 54 54 141 535 175 513 346 53 146 53 531 346	21 e 350 728 261 154 s 47, 700 s 58, 400 9,000 3,580 2,390 5,700 4,670 1,920 1,060 8 2,570 14,900 1,840 1,700 s 27,700 31,500 22,390	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 10, 900 10, 900 10, 900 10, 100 9, 540 6, 670 5, 340 6, 290 4, 960 12, 600 34, 200 32, 200	Mirch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1,400 552 319	32, 900 22, 700 13, 200 9, 560 8 90, 400  55, 200 32, 600 14, 100 6, 860 4, 640  5, 410 9, 360 10, 400 5, 560 4, 340  4, 400 2, 740 1, 480 1, 730 1, 1310  s 37, 000 51, 000 51, 000 527, 700
1	7, 280 5, 250 4, 040 3, 590 6, 650 9, 050 7, 490 5, 440 3, 420 2, 820 2, 170 1, 850 1, 430 1, 190 1, 190	January 195 195 57 52 99 2111 198 250 154 83 77 555 40 35 33 211 117 7 8 8 6	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 504 235 193 105 54 50 38 22 21 23 31	700 1, 260 1, 280 1, 210 1, 210 1, 210 1, 210 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 940 7, 240 5, 530 10, 300 10, 300 9, 140 8, 190 8, 760 17, 700 22, 000	11 148 80 48 1,300 998 306 183 1841 232 174 774 754 54 141 535 175 117 83	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920 1,060 806 82,570 14,900 4,870 2,890 1,840	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 17, 900 10, 900 13, 200 10, 900 10, 100 9, 540 6, 670 5, 340 6, 290 4, 980 12, 600 29, 600 34, 200	Mrch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1,400	32,900 22,700 13,200 9,560 8 90,400 55,200 32,600 14,100 6,860 4,400 5,410 9,360 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 s 37,000 112,000 51,000
1	7, 280 7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 490 1, 180 1, 280 1, 190 1, 100 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1,	January 195 94 57 52 99 211 196 250 154 83 77 55 33 21 12 13 11 7 7 8 6 6 7 8	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 508 304 225 105 54 50 38 22 21 21 21 20 25	700 1, 260 1, 280 1, 210 1, 190 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 7, 240 5, 530 5, 720 10, 300 10, 300 10, 300 10, 300 9, 140 8, 190 8, 760 22, 000 23, 800 11, 500 13, 200	11 1-1-8 80 48 80 998 306 183 141 232 174 535 175 117 83 72 536 531 346 76 76 144	210 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 s 2, 570 14, 900 4, 870 2, 890 1, 840 1, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 17, 900 10, 900 8, 190 13, 200 10, 100 9, 540 6, 670 5, 340 6, 290 4, 960 32, 200 32, 200 23, 900 15, 600	Mirch 517 415 285 224 1,200 651 411 293 210 234 318 293 189 159 171 152 103 102 98 972 1,400 552 319 232	32,900 22,700 13,200 9,560 8 90,400 55,200 32,600 14,100 6,880 4,640 5,410 9,360 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 837,000 112,000 551,000 27,700 15,000 9,400
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 440 3, 420 2, 820 2, 170 1, 850 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1, 280 1,	January 195 195 197 57 52 99 211 196 250 154 83 77 755 40 35 33 21 11 17 7 8 6 6 7 8	3, 830 1, 330 622 5, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 225 193 105 54 32 22 21 23 117	700 1, 260 1, 220 1, 210 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 140 5, 530 5, 720 10, 300 9, 140 8, 190 8, 190 22, 000 22, 000 21, 500 16, 300	11 	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920 1,060 806 8 2,570 14,900 4,870 2,890 1,840 1,700 s 27,700 31,500 22,300 11,400 1,400 5 27,500 3 5,130 5 49,100	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 17, 900 10, 900 10, 900 10, 900 10, 100 9, 540 6, 670 5, 340 6, 220 4, 960 29, 600 34, 200 23, 900 15, 600 10, 900	Mrch 517 415 265 224 1, 200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1, 400 552 319 232 224 188	32,900 22,700 13,200 9,560 890,400 55,200 32,600 14,100 6,880 4,640 5,410 9,380 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 837,000 112,000 51,000 27,700 15,000 9,400 5,530
1	7, 280 7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 3, 420 2, 820 2, 490 1, 1850 1, 430 1, 190 11, 120 11, 1080 1, 060 1, 000 924 932 900 780	January 195 94 57 52 99 211 196 250 0154 83 77 75 33 21 12 13 11 7 8 6 6 7 8	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 508 304 235 193 105 54 50 38 22 21 21 21 21 21 21 21 21 21 21 21	700 1,260 1,820 1,210 20,000 10,900 10,900 7,240 6,290 9,140 7,240 9,940 9,140 7,240 10,300 10,300 10,300 10,300 10,300 17,700 22,000 21,500 13,200 16,300 13,200 16,300	11 1-1-8 80 48 80 998 306 183 141 232 174 535 175 117 83 72 536 531 346 76 76 144	210 e 350 728 261 154 s 47, 700 s 58, 400 9, 000 3, 580 2, 390 5, 720 4, 670 1, 920 1, 060 s 2, 570 14, 900 4, 870 2, 890 1, 840 1, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700 s 27, 700	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 10, 900 10, 900 10, 900 10, 900 10, 100  9, 540 6, 870 10, 900 12, 800 29, 800 34, 200 29, 800 34, 200 32, 200 23, 900 15, 600 10, 900 17, 810	Mirch 517 415 285 224 41, 200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1, 400 552 319 232 224 188 137	32,900 22,700 13,200 9,560 8 90,400  55,200 32,600 14,100 6,860 4,640  5,410 9,360 10,400 5,560 4,340  4,400 2,740 1,480 1,730 1,310  837,000 51,000 27,700 15,000 9,400 5,530 2,880
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 44 4, 400 3, 420 2, 820 1, 660 1, 660 1, 660 1, 1, 690 1, 1, 120 1, 120 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 0	January 195 195 57 52 299 211 196 250 154 83 77 755 30 33 21 11 7 7 8 6 6 7 8	3, 830 1, 330 622 52, 880 3, 520 6, 110 3, 110 1, 310 915 508 304 225 193 105 54 50 322 21 23 17 19 20	700 1, 260 1, 280 1, 210 1, 210 1, 190 10, 700 20, 000 10, 900 7, 240 6, 290 9, 140 9, 140 7, 240 5, 530 5, 720 10, 300 10, 300 10, 300 11, 700 22, 000 21, 500 11, 200 12, 500 13, 200 16, 300 18, 100	11 1-18 80 48 8 1,300 998 306 1306 141 232 174 78 54 54 141 535 175 117 83 346 141 1,010 5-08	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 1,920 1,060 806 82,570 14,900 4,870 2,890 1,840 1,700 s 27,700 37,500 22,300 11,400 5,130 s 49,100 24,800	30, 173  23, 800 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 17, 900 10, 900 13, 200 10, 900 10, 100 9, 540 6, 670 5, 340 6, 290 4, 480 12, 600 29, 600 34, 200 32, 200 23, 900 7, 810 6, 480	Mrrch 517 415 265 224 1,200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1,400 552 319 232 224 188 137 102	32,900 22,700 13,200 9,560 890,400 55,200 32,600 14,100 6,860 4,640 5,410 9,360 10,400 5,560 4,340 4,400 2,740 1,480 1,730 1,310 837,000 112,000 51,000 51,000 9,400 5,550 2,880 1,780
1	7, 280 7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 840 4, 400 2, 820 2, 490 1, 1850 1, 190 1, 120 1, 1080 1, 1080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 780 782 732	January 195 94 57 52 99 211 196 250 0154 83 77 75 33 21 12 13 11 7 8 6 6 7 8	3, 830 1, 330 622 504 1, 150 2, 880 3, 520 6, 110 1, 310 915 508 304 235 193 105 54 50 38 22 21 21 21 21 21 21 21 21 21 21 21	700 1,260 1,820 1,210 20,000 10,900 10,900 7,240 6,290 9,140 7,240 9,940 9,140 7,240 10,300 10,300 10,300 10,300 10,300 17,700 22,000 21,500 13,200 16,300 13,200 16,300	11 	21 e 350 728 261 154 s 47,700 s 58,400 9,000 3,580 2,390 5,720 4,670 1,920 1,060 806 8 2,570 14,900 4,870 2,890 1,840 1,700 s 27,700 31,500 22,300 11,400 1,400 5 27,500 3 5,130 5 49,100	30, 173  23, 600 20, 300 18, 400 15, 800 28, 400 31, 400 29, 400 10, 900 10, 900 10, 900 10, 100  9, 540 6, 670 12, 600 34, 200 29, 600 34, 200 23, 900 15, 600 10, 900 10, 900 11, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 12, 600 13, 200 15, 600 16, 880 6, 880	Mirch 517 415 285 224 41, 200 651 411 292 233 210 234 318 293 189 159 171 152 103 102 98 972 1, 400 552 319 232 224 188 137	32,900 22,700 13,200 9,560 8 90,400  55,200 32,600 14,100 6,860 4,640  5,410 9,360 10,400 5,560 4,340  4,400 2,740 1,480 1,730 1,310  837,000 51,000 27,700 15,000 9,400 5,530 2,880
1	7, 280 5, 250 4, 040 3, 590 4, 310 5, 060 6, 650 9, 050 7, 490 5, 44 4, 400 3, 420 2, 820 1, 660 1, 660 1, 660 1, 1, 690 1, 1, 120 1, 120 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 1, 080 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1,400 552 1,400 552 1,400 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 1,510 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55,200 32,600 14,100 6,860 4,640  5,410 9,360 10,400 5,560 4,340  4,400 2,740 1,480 1,730 1,1310  \$37,000 112,000 51,000 27,700 15,000 9,400 5,530 2,880 1,780 1,780 1,780

e Estimated. s Computed by subdividing day.

1,165,300

### SCIOTO RIVER BASIN

### SCIOTO RIVER BASIN -- Continued

### SCIOTO RIVER AT HIGBY, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued April May June Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Day Mean Mean dis-Tons dis-Tons dis-Tons concenconcenconcencharge charge charge per per tration tration tration (cfs) day (cfs) day (cfs) day (ppm) (ppm) (mgg) 1..... 6,100 1,560 1,760 2,280 2. . . . . 6, 100 1,990 3. . . . . 4,780 4,150 1,150 762 1,770 1,640 Q 4. . . . . . 5. . . . . . 3,610 1,480 6. . . . . . 3,520 1,330 7. . . . . 3,700 3,340 10 1,240 8. . . . . 1,160 9. . . . . 2,980 1,120 1,640 10.... 2,620 1,110 1,210 11..... 2, 450 1.100 q 1 070 12. . . . . 2,450 1,550 1,690 1,840 1,160 27 13. . . . . . 2,540 1,250 14..... 2,540 1,160 2,360 1,770 1,050 16..... 2,360 1.510 17. . . . . 2,540 1,200 1,050 18. . . . . 2,140 e 550 19. . . . . . 2,360 20..... 3,070 1.390 В 3,340 e 1,700 22. . . . . . 3,880 1,590 1,380 23. . . . . . 3.610 24. . . . . . 4,780 1.730 ĸ 25. . . . . . 5, 910 3,650 26. . . . . . 5,720 2,130 1,030 1,450 27. . . . . 4,780 3,700 3,160 1,210 1,290 21 28. . . . . 29. . . . . 30. . . . . 2,710 31. . . . . Total . 107, 300 38, 314 25, 774 2,031 28,287 1,000 July August September 2. . . . . . q 3. . . . . 20 4. . . . . . 5. . . . . 1,590 sa 2, 500 sa 3,000 e 5,800 2,790 2,360 2,980 7. . . . . . 5 7 8. . . . . . 9. . . . . 2,620 10..... 5,310 16,900 1,180 3,790 5.830 R 12..... 2,980 1,710 2,250 13. . . . . . 14. . . . . 1,640 15. . . . . . 1,300 16. . . . . . 1,120 17. . . . . . 18. . . . . 0 19. . . . . . 1.110 20. . . . . 1,120 21. . . . . 1,120 **2**. . . . . 1,010 **3. . . . .** . 24. . . . . e 210 s 200 26. . . . . 27..... q 28. . . . . . 29. . . . . e 35 1,210 30. . . . . 1,260 973 sa 170 31. . . . . . Total . 45,883 41,008 18,491 11,532 

Total discharge for year (cfs-days).....

Total load for year (tons)

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

## SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT HIGBY, OHIO -- Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decanation, P. pipette; S. sevee; N. in native water; W. in distilled water; C. chemically dispersed; M. mechanically dispersed.

	Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNW	BSWCM	BSWCM	BSNM	BSWCM	BSWCM
		1.000									-				_	
		0.500	:	;	1	;	100	100	100	;	!	100	;	100	;	:
		0.350								_						
	Percent finer than indicated size, in millimeters	0.250	:	:	;	100	66	86	66	100	100	9.1	100	66	;	:
	ize, in m	0.125	100	100	100	66	9.1	96	- 84	66	66	96	66	86	100	:
	ndicated s	0.062	86	66	66	46	94	94	92	86	86	92	91	26	66	200
sediment	ner than	0. 031	85	96	88	93	98	88	85	99	96	93	94	83	96	66
Suspended sediment	Percent fi	0.016	88	77	74	83	45	82	8	84	11	88	83	42	8	95
S		900.0	9/	53	25	8	82	69	72	02	20	83	17	28	18	80
		0.004	09	39	88	24	43	57	28	9	30	92	8	8	20	59
		0.005	43	22	88	42	30	43	8	97	19	89	47	8	28	43
	Concentration of suspension	analyzed (ppm)	1,600	1,920	1,430	1,070	1.970	2,230	1,210	2,840	3,060	2,080	2, 680	2,820	1,060	3,080
	Concentration	of sample (ppm)	475	1.090	1.940	1,440	146	519	457	1.410	1,410	432	1,310	1,310	573	1,800
Water	tem- per-	ature (°F)		_	_		_							_		
	Discharge (cfs)		7,710	7, 280	13,400	24, 200	21,800	22,300	22,800	26,100	26, 100	29,800	33, 700	33, 700	35, 200	7,620
	Time		9:20 a.m.			7:00 a.m.			9:00 p.m.	8:45 a.m.			5:00 p.m.	5:00 p.m.	7:00 a.m.	7:30 а.ш.
į	of of collection		Dec. 31, 1954	Feb. 6, 1955	Feb. 6	Feb. 7	Feb. 22	Feb. 23	Feb. 23	Mar. 5	Mar. 5	Mar. 7	Mar. 22	Mar. 22	Mar. 23	July 10

## LITTLE MIAMI RIVER BASIN

## LITTLE MIAMI RIVER NEAR SELMA, OHIO

on Selma Pike, 2.3 miles northwest of Selma, Clark County, and 3.1 miles upstream from North Fork. LOCATION. --At gaging station at bridge DRAINAGE AREA. --50.6 square miles.

Temperature (°F) of water, water year October 1954 to September 1955

Cocroper   November   December   January   Petruary   March   April   May   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min	
Catcorder with the max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min max min	5558
Cotroper   November   December   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   Legistration   L	1222
Coctober   November   December   January   Tectorider with temperature, continuously 8 a.m.   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch   Max-ch	78 74 75
Max.   Alto July 14, 1955, once-daily measurement at approximately 6 a.m.   April   May   June   June   Max.   March   April   May   June   June   June   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   May   March   March   May   March   March   May   March   May   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   Marc	79 87
Coctober   November   December   January   Technicaria attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture attachment   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   Agriculture   A	4 4 4 5
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Coctober   November   December   January   Technuary   Technuary   Technuary   Technuary   Technuary   March   April   May   Jun   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min	
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October         November         Description           71         69         47         46         3           72         71         44         42         3           71         70         44         42         3           71         70         44         42         3           66         66         44         43         3           67         60         44         43         3           68         66         67         44         43         3           69         60         44         43         3         3           65         60         47         45         3         3           66         65         47         45         3         3           66         66         46         45         45         3         3           66         66         46         47         45         3         3           67         66         66         47         44         3         3           68         55         54         48         3         5         5         44         3         3	38 27 28
October         November         Description           71         69         47         46         3           72         71         44         42         3           71         70         44         42         3           71         70         44         42         3           66         66         44         43         3           67         60         44         43         3           68         66         67         44         43         3           69         60         44         43         3         3           65         60         47         45         3         3           66         65         47         45         3         3           66         66         46         45         45         3         3           66         66         46         47         45         3         3           67         66         66         47         44         3         3           68         55         54         48         3         5         5         44         3         3	33 33 33
October         November         Description           71         69         47         46         3           72         71         44         42         3           71         70         44         42         3           71         70         44         42         3           66         66         44         43         3           67         60         44         43         3           68         66         67         44         43         3           69         60         44         43         3         3           65         60         47         45         3         3           66         65         47         45         3         3           66         66         46         45         45         3         3           66         66         46         47         45         3         3           67         66         66         47         44         3         3           68         55         54         48         3         5         5         44         3         3	3 3 4 4
October         November         Description           71         69         47         46         3           72         71         44         42         3           71         70         44         42         3           71         70         44         42         3           66         66         44         43         3           67         60         44         43         3           68         66         67         44         43         3           69         60         44         43         3         3           65         60         47         45         3         3           66         65         47         45         3         3           66         66         46         45         45         3         3           66         66         46         47         45         3         3           67         66         66         47         44         3         3           68         55         54         48         3         5         5         44         3         3	334
Max         Min         max         m           71         69         47         47           72         71         44         44           71         70         44         44           71         70         44         44           71         70         44         44           71         70         44         44           66         65         60         46           66         65         60         47           66         65         47         47           66         65         47         47           67         66         66         47           67         67         46         47           67         67         46         47           67         67         46         47           67         68         55         46           55         54         50         50           55         54         50         50           55         54         50         50           55         54         50         50           55         54         5	35 35 36
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00ctot 177 177 171 171 171 171 171 171 171 17	3 22 23
	8 8 8 8
Day  1. 2. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	23. 24. 25.

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR SELMA, OHIO--Continued

!								ļ	
	September	min	62	62	64	63	64	1	69
	Sept	шах	65	65	65	99	99		72
	August	min	92	92	77	77	77	74	44
	<b>A</b> ug	max	17	77	11	77	11	1.1	62
	uly	nin	14	15	16	75	75	91	
	J.	max	92	42	16	16	1	42	
	June	min	0	67	99		89	:	1
aph.	Ju	max	70	9	9	9	9	'	49
Continue ermogr a.m./	May	min	. 80	-	0	9		_	
1955C nated th ately 8	М	max	9	9	1	•	9	57	9
ember hol-actu proxim	ril	min		_					3
'emperature (°F) of water, water year October 1854 to September 1855Continued ecorder with temperature attachment, continuous ethyl alcohol-actuated thermogra, Mar. 14 to July 14, 1955, once-dally measurement at approximately 8 a. m_Z	April	max	52	4	4	23	à	;	53
er 1954 uous etl sureme	March	min		•	•		80		
r Octob contin ily mea	Ma	max	33	39	ř	ř	<del>~</del>	43	1
ter yea chment, once-da	uary	min	38	38	40	;	;	:	34
Temperature (°F) of water, water year 'Recorder with temperature attachment, of Mar. 14 to July 14, 1955, once-daily	February	max	38	40	41	:	;	;	35
r) of wa mperatu uly 14,	Tanuary	uim	34	32	34	34	34	34	36
ture (°I with te: 14 to J		max	34	34	34	34	34	34	37
empera corder Mar.	December	min	34	36	38	34	32	32	32
E E	Dece	max	36	38	42	42	31	36	36
	November	min	39	38	38	37	37	;	43
	Nove	max	40	39	38	39	38	;	45
	ober	min	99	22	23	25	48	47	29
	Oct	max	26	26	26		25	49	61
	Day	Cas	26	27	28.	29	30.	31	Average

### LITTLE MIAMI RIVER BASIN

### LITTLE MIAMI RIVER BASIN -- Continued

### LITTLE MIAMI RIVER NEAR SELMA, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

		Suspe	nded sedim	ent, water ye	ar October	1954 to Septe	ember 1955		
		October			Novembe	r		Decembe	
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean	Tons	dıs-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	2.1	25	0.1	4.9	19	0, 2	7, 1	5	0.1
2	1.8	13	.1	5,3	30	.4	6.6	5	. 1
3	5.3	48	.7	5.3	14	.2	6.2	9	.2
4 5	5.3 4.5	52 22	.7	5,3 5,3	21 15	.3 .2	6.2 6.2	2	(t) (t)
•	2.0			0.5	10		0.2	1	( )
6	13	44	s1.6	4.9	20	.3	5. 7	7	. 1
7	8.5 5.3	20	.4	4.5	18	. 2	4.9	6	.1
8 9 ; .	4.5	14 32	. 2 . 4	4, 5 4, 1	7 12	.1 .1	4.9 5.7	14 10	.2
10	3.7	27	. 3	4.1	12	i i	5. 7	9	. 1
1			_	l : :		1	_	)	)
11 12	13 35	45 77	sa 3 7. 3	4.1 4.1	12 19	.1	5, 3 5, 3	12 15	.2
13	16	39	1.7	4.1	16	.2	6.2	6	1 .1
14	11	18	. 5	4.5	25	.3	6.6	Ž	. 1
15	14	24	. 9	4.1	12	.1	7.5	6	.1
16	13	10	. 4	4.5	10	,1	7.5	5	.1
17	15	9	.4	4.5	12	:1	7.5	5	i
18	11	10	. 3	4.5	15	. 2	9.1	10	. 2
19	9.1	10	. 2	4,5	20	.2	9.1	2	(t)
20	8. <b>0</b>	25	. 5	4.5	15	. 2	8.0	2	(t)
21	7. 5	30	. 6	4, 5	6	.1	7.5	8	. 2
22	6.6	21	.4	4,1	6	.1	7.1	5	.1
23	6.2	20	.3	4.1	8	.1	7.5	5	.1
24	5, 3 5, <b>3</b>	12 24	.2	5. 3 5. 7	9 5	.1	7.5	6	.1
25	J. J	24	. 3	5.7	5	.1	7.1	•	
26	5, 3	25	. 4	5.3	5	.1	7.1	5	.1
27	5.7	25	.4	6.2	4	.1	7.1	7	. 1
28 29	5.3 5.3	28 29	. 4 . 4	7, 5 8, 0	4 7	.1	41 83	86 89	s 16 20
30	5.3	21	.3	7.1	8	. 2	90	112	27
31	4.9	23	. 3				63	23	3.9
Total .	261.8		24.0	149,4		5, 0	459.2		70.0
		January			February	,		March	
1	53	12	1. 7	13	9	0.3	189	110	sa 65
2	54	16	2.3	19	6	.3	115	41	13
3	47	21	2.7	17	6	.3	86	22	5. 1
4 5	62 81	21 33	3, 5 7, 2	15 16	10 9	.4 .4	280 516	390	e 600 s 689
- 1		- 55		1 40	,				
6	127			, ,					
7 8		131	45	60	109	s30	169	66	30
0	83	40	9.0	132	58	s30 s23	169 108	66 36	30 10
9			9. 0 4. 7	132 84		s30 s23 6.4 e220	169	66	30 10 5.3
9 10	83 65	40 27	9.0	132	58	s30 s23	169 108 82	66 36 24	30 10
10	83 65 56 48	40 27 27 25	9.0 4.7 4.1 3.2	132 84 172 164	58 28  136	s30 s23 6.4 e220 s76	169 108 82 73 67	66 36 24 22 20	30 10 5.3 4.3 3.6
11	83 65 56	40 27 27	9.0 4.7 4.1 3.2 2.6	132 84 172	58 28  136	s30 s23 6.4 e220 s76	169 108 82 73	66 36 24 22	30 10 5.3 4.3
11	83 65 56 48	40 27 27 25 23	9.0 4.7 4.1 3.2	132 84 172 164	58 28  136	s30 s23 6.4 e220 s76	169 108 82 73 67	66 36 24 22 20	30 10 5.3 4.3 3.6 833 11 4.8
10 11 12 13 14	83 65 56 48 42 37 34 31	40 27 27 25 23 25 22 21	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8	132 84 172 164 111 60 50 43	58 28  136 35 11 9	s 30 s 23 6.4 e 220 s 76 10 1.8 1.2	169 108 82 73 67 94 81 64 56	66 36 24 22 20 114 50 28 25	30 10 5.3 4.3 3.6 833 11 4.8 3.8
11	83 65 56 48 42 37 34	40 27 27 25 23 25 22	9.0 4.7 4.1 3.2 2.6 2.5 2.0	132 84 172 164 111 60 50	58 28  136 35 11 9	s 30 s 23 6. 4 e 220 s 76 10 1. 8 1. 2	169 108 82 73 67 94 81 64	66 36 24 22 20 114 50 28	30 10 5.3 4.3 3.6 833 11 4.8
11	83 65 56 48 42 37 34 31	40 27 27 25 23 25 22 21	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8	132 84 172 164 111 60 50 43	58 28  136 35 11 9	s 30 s 23 6.4 e 220 s 76 10 1.8 1.2	169 108 82 73 67 94 81 64 56	66 36 24 22 20 114 50 28 25	30 10 5.3 4.3 3.6 833 11 4.8 3.8
10 11 12 13 14 15 16	83 65 56 48 42 37 34 31 31 27 25	40 27 27 25 23 25 22 21 18	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8 1.5	132 84 172 164 111 60 50 43 37	58 28  136 35 11 9 2 2	\$30 \$23 6.4 e 220 \$76 10 1.8 1.2 2 2 e 50 e 25	169 108 82 73 67 94 81 64 56 54	86 36 24 22 20 114 50 28 25 30	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4
10 11 12 13 14 15 16 17 18	83 65 56 48 42 37 34 31 31 27 25 23	40 27 27 25 23 25 22 21 18	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.5 .9	132 84 172 164 111 60 50 43 37 93 126 84	58 28  136 35 11 9 2 2	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 2 e50 e25 \$9.2	169 108 82 73 67 94 81 64 56 54 50 43 42	66 36 24 22 20 114 50 28 25 30 23 9	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4
10	83 65 56 48 42 37 34 31 31 27 25 23 21	40 27 27 25 23 25 22 21 18	9.0 4.7 4.1 3.2 2.5 2.0 1.8 1.5 .9 .5 .6	132 84 172 164 111 60 50 43 37 93 126 84 66	58 28 28  136 35 11 9 2 2 2	\$30 \$23 6.4 e 220 \$76 10 1.8 1.2 .2 .2 e 50 e 25 \$9.2 2.8	169 108 82 73 67 94 81 64 56 54 50 43 42 38	50 24 22 20 114 50 28 25 30 23 9	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0
10 11 12 13 14 15 16 17 18	83 65 56 48 42 37 34 31 31 27 25 23	40 27 27 25 23 25 22 21 18	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.5 .9	132 84 172 164 111 60 50 43 37 93 126 84	58 28  136 35 11 9 2 2	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 2 e50 e25 \$9.2	169 108 82 73 67 94 81 64 56 54 50 43 42	66 36 24 22 20 114 50 28 25 30 23 9	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4
10	83 65 56 48 42 37 34 31 31 27 25 23 21 21	40 27 27 25 23 25 22 21 18 12 8 9 5	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.5 .9 .5 .6 .3	132 84 172 164 111 60 50 43 37 93 126 84 66 67	58 28  136 35 11 9 2 2 2  37 16 19	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 e50 e25 \$9.2 2.8 3.4	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38	66 36 24 22 20 114 50 28 25 30 23 9 10 7	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.1 .7
10	83 85 56 48 42 37 34 31 31 27 25 23 21 21 20 21	40 27 27 25 23 25 22 21 18 12 8 9 5 6	9. 0 4. 7 4. 7 3. 2 2. 6 2. 5 2. 5 2. 5 3. 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5	132 84 172 164 1111 60 50 43 37 93 126 84 66 67 256 429	58 28  136 35 11 9 2 2 2 2  37 16 19 2 220 252	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 .2 2 e50 e25 \$9,2 2.8 3.4 \$164 \$347	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717	66 36 24 22 20 114 50 28 25 30 23 9 10 7	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 7
10	83 85 56 48 42 37 34 31 31 27 25 23 21 21 20 21	40 27 27 25 23 25 22 21 18 12 8 9 6	9.0 4.1 3.2 2.6 2.5 2.0 1.8 1.5 .9 .5 .6 .3 .3	132 84 172 164 111 60 50 43 37 93 126 84 66 67 256 429 156	58 28  136 35 11 9 2 2 2  37 16 19 220 252 42	\$30 \$23 6. 4 e220 \$76 10 1. 8 1. 2 2 2 e50 e25 \$9. 2 2. 8 3. 4 \$164 \$347 18	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.1 .7
10	83 85 56 48 42 37 34 31 31 27 25 23 21 21 20 21	40 27 27 25 23 25 22 21 18 12 8 9 5 6	9. 0 4. 7 4. 7 3. 2 2. 6 2. 5 2. 5 2. 5 3. 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5	132 84 172 164 1111 60 50 43 37 93 126 84 66 67 256 429	58 28  136 35 11 9 2 2 2 2  37 16 19 2 220 252	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 .2 2 e50 e25 \$9,2 2.8 3.4 \$164 \$347	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717	66 36 24 22 20 114 50 28 25 30 23 9 10 7	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 7
10	83 65 55 48 42 37 34 31 31 27 25 23 21 21 21 20 21 18	27 27 27 25 23 25 22 21 18 12 8 9 5 6	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.5 .9 .6 .3 .3 .7 .6 .5	132 84 172 164 111 60 50 43 37 93 126 84 66 67 256 429 156 107 84	58 28 35 11 9 2 2 2 2 37 16 19 220 252 42 22 16	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 2 e50 e25 \$9.2 2.8 3.4 \$164 \$347 18 6.4 3.6	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717 171 118 93	66 36 24 22 20 114 50 28 25 30 27 7 7 329 472 92 42 32	30 10 5.3 4.3 3.6 8 3.3 11 4.8 3.8 4.4 3.1 1.0 1.1 .7 .7 s395 s1100 42 13 8.0
10	83 85 56 48 42 37 34 31 27 25 23 21 21 20 18 16 15	40 27 27 25 23 25 22 21 18 12 8 9 5 6 12 12 12 12	9.0 4.1 3.2 2.5 2.5 2.0 1.5 .5 .3 .3 .7 .6 .5 .4	132 84 172 164 111 60 50 43 37 93 126 84 66 67 256 429 156 107 84	58 28 136 35 11 9 2 2 37 16 19 220 252 42 222 16	\$30 \$23 4 e220 \$76 10 1.8 1.2 2 2 e50 e25 \$9.2 2.8 3.4 \$164 \$347 18 6.4 3.6	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 38 355 717 171 118 93	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7 7 329 472 92 472 42 32	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 7,7 \$395 \$1100 42 13 8.0
10	83 65 56 48 42 37 34 31 31 27 25 23 21 21 21 20 21 18 16 15	27 27 27 25 23 25 22 21 18 12 8 9 5 6 6 12 12 12 11	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8 1.5 .6 .3 .7 .6 .5 .4	132 84 172 164 111 60 50 43 37 93 128 84 66 67 256 429 156 107 84	58 28 136 35 11 9 2 2 37 16 19 220 252 42 22 16 15 132	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 2 e50 e25 \$9.2 2.8 3.4 \$164 \$347 18 6.4 3.6	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717 171 118 93 81	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7 7 329 472 42 32	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.1 .7 .7 .7 8395 81100 42 13 8.0
10	83 65 56 48 42 37 37 31 31 27 25 23 21 21 21 21 18 16 15	27 27 27 25 23 25 22 21 18 12 8 9 5 6 12 12 12 11	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8 5 .5 .6 .3 .7 .6 .5 .6 .5 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6	132 84 172 164 111 60 50 43 37 93 126 84 66 67 256 429 156 107 84	58 28 136 35 11 9 2 2 37 16 19 220 252 42 222 16	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 e50 e25 \$9.2 2.8 3.4 \$164 \$347 18 6.4 3.6 3.1 \$89	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717 171 118 93 81 70 65 72	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7 7 329 472 42 32 22 42 32	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 .7 .7 8395 8100 42 13 8.0 4.8 7.9 3.7 6.8
10	83 65 56 48 42 37 34 31 31 27 25 23 21 21 20 21 18 16 15	27 27 27 25 23 25 22 21 18 12 8 9 5 6 12 12 12 11 12 11	9.0 4.1 3.2 2.6 2.5 2.0 1.5 .5 .3 .7 .6 .5 .4 .3 .6 .6 .6 .6 .6 .6 .6 .6	132 84 172 164 111 60 50 43 37 93 128 84 66 67 256 429 156 107 84	58 28 	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 e50 e25 \$9.2 2.8 3.4 \$164 \$347 18 6.4 3.6 3.1 \$89	169 108 82 73 67 94 81 64 56 54 50 43 42 38 355 717 171 118 93 81 70 65 72 67	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7 7 329 472 42 32 22 42 32	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 .7 .7 8395 8100 42 13 8.0 4.8 7.9 3.7 6.8
10	83 65 56 48 42 37 37 34 31 27 25 23 21 21 21 21 21 18 16 15	27 27 27 25 23 25 22 21 18 12 8 9 5 6 12 12 12 11	9.0 4.7 4.1 3.2 2.6 2.5 2.0 1.8 5 .5 .6 .3 .7 .6 .5 .6 .5 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6	132 84 172 164 111 60 50 43 37 93 126 84 66 67 256 429 156 107 84 76 202 129	58 28 136 35 11 9 2 2 37 16 19 220 252 42 22 16 15 132 44	\$30 \$23 6.4 e220 \$76 10 1.8 1.2 2 2 e50 e25 \$9.2 2.8 3.4 \$16.4 \$347 18 6.4 \$3.1 \$89 15	169 108 82 73 67 94 81 64 56 54 50 43 42 38 38 355 717 171 118 93 81 70 65 72	66 36 24 22 20 114 50 28 25 30 23 9 10 7 7 7 329 472 92 42 32	30 10 5.3 4.3 3.6 833 11 4.8 3.8 4.4 3.1 1.0 1.7 7 7 8395 8100 42 13 8.0

e Estimated.

e Estimated.

S Computed by subdividing day.

Less than 0.05 ton.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

### LITTLE MIAMI RIVER NEAR SELMA, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

,			ediment, wa	ater year Oct		September	1955Contin		
		April	d andimont		May	d ==d(===4		June	l codiment
_	Mean	Mean	d sediment	Mean	Mean	d sediment	Mean	Suspended N°an	seuiment
Day	dis-	mean concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
i	54	25	3.6	18	21	1,0	7, 2	19	0,4
2	50	22	3.0	17	11	.5	6.3	16	. 3
3	45	15	1.8	16	12	.5	5.5	19	. 3
4	39	16	1.7	15	25	1, 0	5, 5	10	. 1
5	36	14	1.4	14	23	.9	5, 5	8	. 1
_									
<u> </u>	41	15	1.7	13	10	.4	5, 9	[ 7 [	. 1
7	37	8	.8	14	17	.6	6.8	6 1	.1
<b>8</b> 9	32 30	10 10	. 9	13 12	24 15	.8 .5	7.6 7.6	7 10	. 1 . 2
ō	27	1 19	.6	12	15	.5	7.6	27	. 6
		-					""	-,	
1	30	6	. 5	12	25	.8	9, 1	23	. 6
<b>2</b>	39	7	.7	11	15	.4	11	30	. 9
3	40	13	1.4	12	24	.8	9, 1	30	. 7
4	35	10	. 9	14	19	.7	8.1	34	. 7
5	32	16	1.4	11	18	.5	7.6	30	. 6
.	28	19	ا ا		_	ا  ا		ا ہے ا	
6 7	28 25	19	1.4	10	7	.2	6.3	27 27	. 4
8	25 24	21	1.3 1.4	9, 1 8, 6	5 7	. 1 . 2	6.3 5.9	27	. 4 . 4
9	26	17	1.4	8.6	10	.2	5.9 5.9	21	.4
0	28	12	1.2	8.6	14	.3	5.5	13	.3
			'	"."		'*	1 3.5	-"	
1	29	15	1, 2	8. 1	13	b.3	6.3	13	. 2
2. <i>.</i>	26	9	.6	8.6	14	. 3	6.8	15	. 3
3	24	10	.6	11	25	.7	11	10	. 3
<u>4</u>	31	21	1.8	9.1	34	.8	11	8	. 2
5	33	8	.7	8. <b>6</b>	27	. 6	10	10	. 3
6	26	6	.4	8.1	26	.6	9.1	6	. 1
7	24	5	.3	7.6	20	.4	7. 2	5	.1
8	21	5	.3		21	.4	6.3	7	;î
9	20	15	1 .8	7.6 10			5.5	181	. 1
9   0	<b>2</b> 0 18	15 20	1.0	10 8, 1	20 20	. 5 . 4	5. 5 5. 1	8 10	:1 :1
9 0 1	20 18 	20	. 8 1. 0	10 8, 1 7, 6	20 20 17	. 5 . 4 . 3	5, 5 5, 1	8 10 	.1 
9   0	<b>2</b> 0 18	20	1 .8	10 8, 1	20 20	. 5 . 4	5, 5 5, 1  218, 6	8 10 	9.3
9 0 1	20 18 	20	. 8 1. 0	10 8, 1 7, 6	20 20 17	. 5 . 4 . 3	5, 5 5, 1	8 10   September	.1 
9	950 	20   July 28	35. 1 0. 4	10 8. 1 7. 6 343. 3	20 20 17  August 30	.5 .4 .3 16.2	5, 5 5, 1  218, 6	10   September 27	9.3
9	20 18  950  4. 7 4. 4	20   July 28 25	35. 1 0. 4	10 8. 1 7. 6 343. 3 4. 4 4. 0	20 20 17  August 30 16	. 5 . 4 . 3 16. 2	5.5 5.1  218.6 1.0 1.0	10   September 27 23	9.3
9	20 18  950  4. 7 4. 4 6. 3	20   July 28 25 30	35.1 0.4 .3 .5	10 8.1 7.6 343.3 4.4 4.0 3.6	20 20 17  August 30 16 30	0.4 .2 .3	5. 5 5. 1  218. 6 1. 0 1. 0 . 9	10   September 27 23 33	9.3 0.1 .1
9	20 18  950  4. 7 4. 4 6. 3 7. 2	20   July 28 25 30 40	35, 1 0, 4 35, 1 0, 4 5 8	10 8. 1 7. 6 343. 3 4. 4 4. 0 3. 6 3. 6	20 20 17  August 30 16 30 40	0.4 .2 .3 .4	5. 5 5. 1  218. 6 1. 0 1. 0 . 9	10   September 27 23 33 34	9.3 0.1 .1 .1
9	20 18  950  4. 7 4. 4 6. 3	20   July 28 25 30	35.1 0.4 .3 .5	10 8.1 7.6 343.3 4.4 4.0 3.6	20 20 17  August 30 16 30	0.4 .2 .3	5. 5 5. 1  218. 6 1. 0 1. 0 . 9	10   September 27 23 33	9.3 0.1 .1
9	20 18  950  4. 7 4. 4 6. 3 7. 2	20   July 28 25 30 40	35.1 0.4 .3 .5 .8 .4	10 8. 1 7. 6 343. 3 4. 4 4. 0 3. 6 3. 6 3. 6	20 20 17  August 30 16 30 40 29	.5 .4 .3 .16.2 .0.4 .2 .3 .4 .3	5.5 5.1  218.6 1.0 1.0 .9 .9	10   September 27 23 33 34	9.3 0.1 .1 .1 .1
9	20 18  950  4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8	20   July 28 25 30 40 33 41 28	35.1 0.4 .3 .5 .8 .4	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3	20 20 17  August 30 16 30 40	.5 .4 .3 .16.2 .0.4 .2 .3 .4 .3	5.5 5.1 	10	9.3 0.1 .1 .1 .1 .1
9	20 18  950 4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30	20  July 28 25 30 40 33	35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0	20 20 17  August 30 16 30 40 29 38 40 35	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5	5.5 5.1 	10   September 27 23 33 34 38 35 35	9.3 0.1 .1 .1 .1 .1
9	20 18  950  4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30 39	20  July 28 25 30 40 33 41 28 31	35.1 0.4 .3 .5 .8 .4 .5 .5 .5 e 30	10 8.1 7.6 343.3	20 20 17  August 30 16 30 40 29 38 40 35 35	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .5	5.5 5.1 	10   27 23 33 34 38 35 35 35 35	9.3 0.1 .1 .1 .1 .1 .1
9	20 18  950 4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30	20   July 28 25 30 40 33 41 28	35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0	20 20 17  August 30 16 30 40 29 38 40 35	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5	5.5 5.1 	10   September 27 23 33 34 38 35 35	9.3 0.1 .1 .1 .1 .1
9	20 18  950  4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30 39 78	20 	.8 1.0  35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5 e 30 sa 50	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0 3.0 2.7	20 20 17  August 30 16 30 40 29 38 40 35 35 35	0.4 .2 .3 .3 .4 .2 .3 .4 .3 .3 .5 .4 .4 .2	1.0 1.0 1.0 9 .9 .9 .8 .8 .8	10 	9.3 0.1 .1 .1 .1 .1 .1
9	20 18  950  4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30 39 78	20   July 28 25 30 40 33 41 28 31  210	35.1  0.4 .5 .8 .4 .5 .5 .2.5 e 30 sa 50	10 8,1 7,6 343,3 4.4 4.0 3.6 3.6 3.6 3.6 3.7 4.4 4.0 2.7	20 20 17  August 30 16 30 40 29 38 40 35 35 34	.5 .4 .3 16.2 0.4 .2 .3 .4 .3 .5 .4 .4 .5 .2	5.5 5.1  218.6 1.0 1.0 .9 .9 .9 .8 .9 .8 1.0	10 	0.1 .1 .1 .1 .1 .1 .1 .1
9	950 4.7 4.8 6.3 7.2 4.7 4.4 6.8 30 39 78	20 	.8 1.0  35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5 e 30 sa 50	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.6 3.2 4.4 4.0 3.0 2.7 2.7 2.4	20 20 17  August 30 16 30 40 29 38 40 35 35 35 34 24	0.4 .2 .3 .3 .3 .3 .3 .3 .5 .4 .4 .3 .2 .2	1.0 1.0 1.0 .9 .9 .9 .8 .8 1.0	10   27 23 33 34 38 35 35 35 35 36 46	0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950  4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30 39 78	20   July 28 25 30 40 33 41 28 31  210	35.1  0.4 .5 .8 .4 .5 .5 .2.5 e 30 sa 50	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,0 2,7 2,7 2,7 2,4	20 20 17  August 30 16 30 40 29 38 40 35 35 34	.5 .4 .3 16.2 0.4 .2 .3 .4 .3 .5 .4 .4 .5 .2	1.0 1.0 1.0 .9 .9 .8 .8 1.0 5.4 3.0 2.1	10 	0.1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950 - 4. 7 4. 4 6. 3 7. 2 4. 7 4. 4 6. 8 30 78 35 21 14	20 20 30 28 25 30 40 33 41 28 31  210 59 37	35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5 e 30 sa 50	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.6 3.2 4.4 4.0 3.0 2.7 2.7 2.4	20 20 17 	0.4 .2 .3 .4 .3 .4 .3 .3 .5 .4 .4 .2 .2 .2 .2	1.0 1.0 1.0 .9 .9 .9 .8 .8 1.0	10 	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1	20 July 28 25 30 40 40 33 41 28 31 210 59 37 39 48 33	35.1 0.4 .3 .5 .8 .4 .5 .2.5 e 30 sa 50 5.6 2.1 1.5 8	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0 3.0 2.7 2.7 2.1 2.1 2.7	20 20 17  August 30 16 30 40 29 38 40 35 35 35 34 24 26 27 45 23	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .5 .2 .2 .2 .2	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 35 34 44	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .2 .2 .2
9	20 18  950  4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 78 35 21 14 11 9.1 8.1	20 July 28 25 30 40 33 41 28 31 210 59 37 39 48 33 35	0.4 35.1 0.4 3 .5 8 .4 .5 .2.5 e 30 sa 50 5.6 2.1 1.5 1.8	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0 3.0 2.7 2.7 2.1 2.1 2.7	20 20 17  August 30 16 30 40 29 38 40 35 35 34 24 26 27 45 23	0.4 .2 .3 .4 .3 .4 .3 .5 .4 .4 .2 .2 .2 .2 .2 .2	1.0 1.0 1.0 1.0 9 .9 .8 .8 1.0 5.4 3.0 2.1 1.7 1.4	10   27 23 33 34 38 35 35 35 36 46 44 42	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .1 .2 .2 .2 .2
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1	20 20 20 20 20 20 20 20 20 20 20 20 20 2	35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5 e30 sa 50 5.6 2.1 1.1 8 .8	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,7 2,7 2,7 2,7 2,7 2,1 2,1 2,1 2,1	20 20 17  August 30 16 30 40 29 38 40 35 35 34 24 26 27 45 23	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .3 .2 .2 .2 .2 .2 .2	5.5 5.1 	10 	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 19.1 8.1 7.2 6.8	20 July 28 25 30 40 33 41 28 31 210 59 48 33 35 32 27	35.1  0.4 35.1  0.4 5.8 4 5.2.5 e 30 sa 50 5.6 2.1 1.5 1.4 8 6.6 5.5	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.2 4.4 4.0 3.0 2.7 2.7 2.4 2.1 2.1 2.7	20 20 17  August 30 40 29 38 40 35 35 35 34 24 26 27 45 23	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 33 34 44 42 39 29	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 8.3	20	35.1  0.4 35.1  0.4 3 5 8 4 5 5 2.5 e 30 sa 50  5.6 2.1 1.5 1.4 8 8 8 6 5 6	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,0 2,7 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 1,9 1,9	20 20 17 	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .3 .4 .5 .4 .4 .2 .2 .2 .2 .2 .2 .2 .2 .4 .3	5.5 5.1 	10 	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 19.1 8.1 7.2 6.8	20 July 28 25 30 40 33 41 28 31 210 59 48 33 35 32 27	35.1  0.4 35.1  0.4 5.8 4 5.2.5 e 30 sa 50 5.6 2.1 1.5 1.4 8 6.6 5.5	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.2 4.4 4.0 3.0 2.7 2.7 2.4 2.1 2.1 2.7	20 20 17  August 30 40 29 38 40 35 35 35 34 24 26 27 45 23	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 33 34 44 42 39 29	9.3 0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 8.3	20	35.1  0.4 35.1  0.4 3 5 8 4 5 5 2.5 e 30 sa 50  5.6 2.1 1.5 1.4 8 8 8 6 5 6	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,0 2,7 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 1,9 1,9	20 20 17 	.5 .4 .3 .16.2 .2 .3 .4 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	1.0 1.0 1.0 .9 .9 .8 1.0 5.4 3.0 2.1 1.7 1.4 1.2 1.0 .9	10 	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 78 35 21 14 19,1 8.1 7.2 6.3 8.3 7.2 6.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.7 8.3 9.3 9.3 8.3 9.3 9.3 9.3 8.3 9.3 8.3 9.3 9.3 9.3 9.3 8.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9	20	.8 1.0	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,3 4,4 4,0 2,7 2,7 2,7 2,1 2,1 2,1 2,1 2,1 1,2 1,2 1,2 1,2 1,2	20 20 17 	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .3 .4 .5 .4 .4 .2 .2 .2 .2 .2 .2 .2 .2 .4 .3	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 42 39 29 21 10 10	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.3	20 July 28 25 30 40 40 33 41 28 31 210 59 37 39 48 33 35 32 27 31 25 12 20 26	35.1  0.4 35.1  0.4 35.1  0.4 5.8 4 5.5 6.30 5.6 2.1 1.5 1.4 8 8 6 5.6 4 2.2 2.3	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,7 2,7 2,7 2,7 2,1 2,1 2,1 2,1 2,1 2,1 2,1 2,1 4,4 4,0	20 20 20 17	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	September  27 23 33 34 38 35 35 35 36 46 44 32 35 34 44 42 39 29 110 10 10 10	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.3 7.8	20 July 28 25 30 40 33 41 28 31 210 59 37 39 48 33 35 32 27 31 25 20 26 25	.8 1.0	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0 3.0 2.7 2.7 2.1 2.1 2.1 2.1 2.7 1.9 1.7 1.4 4.4 4.0 2.7	20 20 20 17 20 17 20 18 20 18 30 40 29 38 40 35 35 35 34 24 28 27 45 23 92 106 88 85 73 78 47 60 80	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .5 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 42 39 29 21 10 10 10 11	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.3	20 July 28 25 30 40 40 33 41 28 31 210 59 37 39 48 33 35 32 27 31 25 12 20 26	35.1  0.4 35.1  0.4 35.1  0.4 5.8 4 5.5 6.30 5.6 2.1 1.5 1.4 8 8 6 5.6 4 2.2 2.3	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,7 2,7 2,7 2,7 2,1 2,1 2,1 2,1 2,1 2,1 2,1 2,1 4,4 4,0	20 20 20 17	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	September  27 23 33 34 38 35 35 35 36 46 44 32 35 34 44 42 39 29 110 10 10 10	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.7 2.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8	20 July 28 25 30 40 33 41 28 31 210 59 37 39 48 33 35 32 27 31 25 20 26 25 19	.8 1.0 35.1 35.1 0.4 .3 .5 .8 .4 .5 .5 .2 .5 e 30 5.6 .2 .1 1.1 4 .8 .8 .6 .5 .6 .4 .2 .2 .3 .3 .3 .3	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.3 4.4 4.0 3.0 2.7 2.7 2.1 2.1 2.1 2.1 2.7 1.9 1.7 1.4 4.1 2.4 1.7	20 20 20 17 20 17 20 18 30 40 29 38 40 35 35 34 24 28 27 45 23 92 106 86 85 73 78 47 60 80 70	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .5 .5 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .3 .4 .5 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 42 39 29 21 10 10 10 11 16	9.3  0.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.3 7.2 6.3 7.2 6.3	20	1.0 35.1 0.4 .3 .5 .8 .4 .5 .5 .2.5 e 30 sa 50 5.6 2.1 1.4 .8 .6 .5 .6 .4 .8 .8 .4 .5 .8 .8 .8 .8 .8 .8 .8 .8 .8 .8	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,0 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 2,1 1,2 1,2 1,2 1,2	20 20 20 17 20 17 20 17 20 17 20 18 20 18 20 18 20 29 38 40 35 35 34 24 26 27 45 23 92 106 88 5 73 78 47 60 80 70 48	.5 .4 .3 .16.2 .2 .3 .4 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 35 34 44 42 39 29 21 10 10 10 10 11 16 16	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 7.2 6.8 7.2 6.8 7.2 7.2 6.8 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	35.1  0.4 .3 .5 .8 .4 .5 .2.5 e30  5.6 2.1 1.4 .8 .8 .6 .5 .6 .4 .2 .2 .3 .3 .3 .7	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.7 2.7 2.7 2.7 2.1 2.1 2.7 1.9 1.7 1.4 2.1 1.2	20 20 20 17	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .4 .5 .4 .4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .3 .5 .4 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 35 34 44 42 39 29 21 10 10 10 10 11 16 18	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.3 5.2 1 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7	20	.8 1.0	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,3 4,4 4,0 2,7 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 1,2 1,2 1,2 1,2 1,7 1,4 1,2 1,7 1,7 1,4 1,7 1,7 1,7 1,4 1,7	20 20 20 17 20 17 20 17 20 17 20 18 20 18 20 18 20 20 20 20 20 20 20 20 20 20 20 20 20	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 42 39 29 21 10 10 10 10 11 16 15 48 55	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 7.2 6.8 7.2 6.8 7.2 7.2 6.8 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2 7.2	20 20 20 20 20 20 20 20 20 20 20 20 20 2	35.1  0.4 35.1  0.4 35.1  0.4 35.1  0.4 35.8 4 55.8 2.5 830 8a.50  5.6 2.1 1.5 8.6 2.1 1.5 8.6 2.1 2.2 3.3 3.3 3.3 3.3 3.3 3.3	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 3,7 2,7 2,7 2,4 2,1 2,1 2,1 2,7 1,9 1,7 1,4 1,2 1,2 1,7 1,7 1,4 1,7 1,4 1,7 1,4 1,7 1,4 1,4	20 20 20 17	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .4 .5 .4 .4 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .5 .5 .4 .5 .5 .6 .7 .5 .5 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5.5 5.1 	10   27 23 33 34 38 35 35 35 36 46 44 32 35 34 44 42 39 29 21 10 10 10 10 11 16 18	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9.0	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.8 7.2 6.3	20 20 20 20 20 20 20 20 20 20 20 20 20 2	.8 1.0	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,3 4,4 4,0 2,7 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 1,2 1,2 1,2 1,2 1,7 1,4 1,2 1,7 1,7 1,4 1,7 1,7 1,7 1,4 1,7	20 20 17  August 30 18 30 40 29 38 40 35 35 34 24 26 27 45 23 106 86 87 87 80 80 70 48 25 25 35	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	5.5 5.1 	10 	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 78 35 21 14 11 9.1 8.1 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.2 6.3 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7	20 20 28 25 30 40 33 41 28 31 1 - 210 26 25 19 61 82 210 71 34	.8 1.0	10 8.1 7.6 343.3 4.4 4.0 3.6 3.6 3.6 3.3 4.4 4.0 3.0 2.7 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	20 20 20 20 17	.5 .3 .16.2 .2 .3 .4 .3 .3 .5 .4 .5 .5 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .3 .5 .4 .5 .5 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5.5 5.1 	10 	9.3  0.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .
9.0. 1. Total.  Total.  L	20 18  950 4.7 4.4 6.3 7.2 4.7 4.4 6.8 30 39 78 35 21 14 11 9.1 8.1 7.2 6.8 7.2 6.8 7.2 6.3 5.1 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7 4.7	20 20 20 20 20 20 20 20 20 20 20 20 20 2	35.1  0.4 35.1  0.4 35.1  0.4 5.8 4 5.5 6.8 2.1 1.5 6.6 2.1 1.5 6.6 2.1 2.2 2.3 3.3 7.9 8a4 7.9 8a4 8.2.5 3.3 110.4	10 8,1 7,6 343,3 4,4 4,0 3,6 3,6 3,6 3,6 3,6 4,4 4,0 2,7 2,7 2,4 2,1 2,1 2,1 2,1 2,1 2,1 1,2 1,2 1,7 1,7 1,4 1,2 1,7 1,7 1,7 1,7 1,7 1,7 1,7 1,7 1,7 1,7	20 20 20 17	.5 .4 .3 .16.2 .2 .3 .4 .3 .3 .4 .5 .4 .4 .2 .2 .2 .2 .2 .2 .2 .2 .3 .4 .5 .4 .5 .5 .4 .5 .5 .6 .7 .5 .5 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5.5 5.1 	10 	0.1 

S Computed by subdividing day.
t Less than 0.05 ton.
a Computed from partly estimated concentration grapb.
b Computed from estimated concentration graph.

LITTLE MIAMI RIVER NEAR SELMA, OHIO -- Continued

Particle-size analyses of suspended scientism, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal thee; D. decantation; P. pipette; S. sieve, N, in native water;

		Methods of analysis		BSWCM	SWCM	WCM	WCM	NM
	;	¥ 8		BE	Ä	ä	ăř.	Be
			0.500		_			
			0.350 0.500 1.000					
		illimeters	0, 250	100	1	ł	100	100
		ize, in mi	0, 125	66	100	100	66	66
rsed)		Percent finer than indicated size, in millimeters	0.004 0.008 0.016 0.031 0.062 0.125	86	66	66	96	46
ally dispe	edi. tent	ner than i	0.031	97	81	92	94	94
mechanic	Suspended sedi. vent	Percent fü	0.016	98	88	81	82	82
rsed; M,	S	_	900.0	75	92	88	12	20
ally dispe				63	99	19	61	75
C, chemic			0.002	21	57	49	49	40
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	1,540	1,030	1,860	1, 180	1,090
W, in d		Concentration	of sample (ppm)	434	274	1, 110	890	890
	Water	tem- per-	ature (°F)					
		Dis- charge	(cis)	302	335	190	1,160	1, 160
		Time		1:10 a.m.	11:35 a. m.	11:45 p.m.	3:40 a. m.	3:40 a.m.
	ć	Date of collection		Feb. 10, 1955	Feb. 21	Mar. 21	Mar. 22	Mar. 22

### NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO

LOCATION.--At gaging station at bridge on Jackson Road, 1.1 miles upstream from Goose Creek, and 1.3 miles southwest of Pitchin, Clark County.

DRAINAGE AREA.--29.1 square miles.

RECORDS AVALLABLE.--Chemical analyses: October 1953 to September 1954.

Water temperatures: August 1952 to September 1955.

Sediment records: August 1952 to September 1955.

SETTREMES, 1954-55.--Water temperatures: Maximum, 89°F Aug. 5; minimum, freezing point on several days during December, January, and February.

Sediment concentrations: Maximum daily, 225 ppm Mar. 22; minimum daily, 2 ppm on many days during November to January, and April.

Sediment loads: Maximum daily, 242 tons Mar. 22; minimum daily, less thar 0.05 ton on many days during October to December, August and September.

EXTREMES, 1952-55.--Water temperatures: Maximum, 89°F Aug. 5, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 669 ppm June 10, 1953; minimum daily, 1 ppm Feb. 9-10, Dec. 30, 1953.

Sediment loads: Maximum daily, 242 tons Mar. 22, 1955; minimum daily, less than 0.05 ton on many days during October to December 1952, February, September to December 1953, January to March, September 1052, February, September to December 1953, January to March, September to December 1954, August and September 1955.

Temperature (°F) of water, water year October 1954 to September 1955

Temperature (°F) of water, water year October 1954 to September 1955

				_Once-	-daily mea	suremen	t at varyi	ng hours7	-			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	40	37	40	38		58	57	64	80	78	68
2	70	40	36	45	32	50	60	56	62	80	75	69
3	70	40	34	48	32	45 •	50	60	62	75	75	79
4	70	40	40	45	32	55	50	61	65	80	80	79
5	70	42	35	50	35	48	65	55	68	81	89	79
6	60	46	36	45	33	45	60	58	73	76	77	69
7	50	40	34	38		34		60	65	80	76	71
8		40	35	40		40	50	60	65	75	77	71
9		43	36	40	35	45	55	62	61	75	76	75
10	60	43	35	40	40		62	62	62	72	75	68
11	65	40	37	36		55	55	65	65	78	80	68
12	70	48	37	33		60	70	64	65	69	78	64
13	65	45	38	33	32	46	60	60	62	74	69	71
14	68	48	40	32	32	45	60	70	62	74	65	73
15	50	44	36	35	35	56	58	60	65	72	65	76
16	55	45	40	40	36	48	70	60	62	73	75	80
17	48	50	40	35	35	45	70	58	63	73	82	68
18	48	54	36	40	46	48	55	68	68	75	82	
19	60	58	35	32	45	52	60	70	65	76	74	68
20	60	50	32	32	45	49	60	75	71	76	75	78
21		50	33	35	40	54	70	66	72		72	82
22		40	33	35	38	45	60	70	74	69	74	77
23	50	40	35	32	45	40	58	75	67	70	74	66
24	50	40	42	34	40	46	62	70	65	79	68	70
25		40	40	35	40	33	55	65	68	71	66	66
26	58	40	38	32	44	33	55	75	61		80	58
27	58	40	42	32	45	35	65	73			83	65
28	46	40	48		55	48	55	75	70	79	79	71
29	40	35	52	32		50	70	66	70	72	78	60
30	50		48	32		53	69	59	72	84	75	66
31	46	<del></del>	45	32		46		56		76	71_	
Aver- age	58	43	38	37	39	47	60	64	66	76	76	71

### NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			enaea sedim	ent, water ye		1954 to Sept	ember 1955		
		October		11	November			December	
	Mean	Suspende	d sediment	T	Suspende	ed sediment		Suspende	d sediment
Day	Mean dis-	Mean	T	Mean dis-	Mean	T	Mean	Mean	
Zuj	charge	concen-	Tons		concen-	Tons	dis-	concen-	Tons
	(cfs)	tration	per day	charge (cfs)	tration	per	charge (cfs)	tration	per
	(020)	(ppm)	uay	(613)	(ppm)	day	(CIS)	(ppm)	day
1.,,	1.0	27	0.1	3.8	2	(t)	4, 2	8	0.1
2. ,	1.0	28	.1	3.8	2	(t)	4.0	9	.1
3	1.8	24	.1	3, 6	5	(t)	3.8	7	.1
4	3.8	10	.1	3.8	7	0.1	3,6	7	. 1
5	2.6	10	.1	3.8	13	.1	3.5	8	a.1
6	3.8	11	١.	۱			١.,		
7	2.9	12	.1	3.8 3.8	18 13	.2	3, 1 3, 1	8 2	.1
8	2.4	23	i	3.5	19	.1	3.1	2	li .
9	2,2	27	.2	3.5	22	.2	3.3	2	<u> </u>
10	1,9	20	.ī	3, 3	24	,2	3.1	2	11
		1	ĺ	11			1	_	(t)
11	4.2	22	. 2	3.3	26	.2	2.7	3	11 ''
12	14	46	1.7	2.9	23	.2	2.9	3	11
13	8.6	19	.4	2.9	17	.1	2.9	3	ll .
14 15	6.6	13	.2	2.9	14	.1	3.1	4	Ų .
20	8.6	15	.3	2.9	11	.1	3.5	8	.1
16	9.0	12	.3	2.9	8	.1	3.6	7	.1
17	9.9	15	.4	2.9	3	h '-	3.6	5	(t)
18	9.0	12	.3	2.9	5	II.	4.0	7	.1
19	6.6	10	.2	2.9	5	(t)	4.4	14	. 2
20	6.6	12	.2	2.9	6	l '''	4.0	11	a.1
	5.4	- 12	,	0.0		11			1 .
21	5.2	11	.2	2.9 2.9	6 7	ν	3.6	10 24	.1
22 23	5.0	9	.1	2.9	8	a.1 a.1	3.5 3.6	6	.2
24	4,8	8	:i	3.1	8	.1	3.8	"7	.1
25	4.0	l ř	:ī	3.3	7	:i	3.5	1 7	:i
				5.5			0.0	'	
26	4.0	11	.1	3.3	12	.1	3.5	5	(t)
27	4.2	10	.1	3.6	13	. 1	3.5	5	(t)
28	3.8	8	.1	4.2	6	.1	16	79	s 5.9
29	4.2	8	1	4.4	5	.1	44	103	s 13
30	4.0	4							
	9 0		(t)	4.4	7	a,1	46	77	9.6
31	3.8	3	(t)				31	23	1.9
31 Totai.	3,8 154.9			101.1		3,1			
31	3.8	3	(t)				31	23	1.9
Total.	3, 8 154. 9	3  January	(t) 6.5	101.1	 February	3.1	31 231.5	23  March	1.9
Total.	3.8	3	(t) 6.5			3.1	31 231.5	23	32.5
31 Totai.	3, 8 154, 9 24 24 20	3  January 24 23 15	(t) 6.5	101.1	 February	3.1	31 231.5	23  March 125	1.9
1 2 4	3.8 154.9 24 24 20 27	3  January 24 23 15 100	1.6 1.5 .8 b7	8.3 11 9.7 8.6	February  18 28 23 16	0.4 .8 .6	31 231.5	23  March 125 60 31 70	1.9 32.5 32 12 4.3 sb13
1 2	3, 8 154, 9 24 24 20	3  January 24 23 15	1.6 1.5 .8	8.3 11 9.7	February 18 28 23	3.1 0.4 .8 .6	31 231.5	23  March 125 60 31	1.9 32.5 32 12 4.3
1 2 4	3.8 154.9 24 24 20 27 39	3  January 24 23 15 100 143	1.6 1.5 2.8 57	8.3 11 9.7 8.6 8.1	February 18 28 23 16 10	3.1 0.4 .8 .6 .4 .2	31 231.5 94 72 51 58 116	23  March 125 60 31 70 160	32 12 4.3 sb13 b50
1 2 4 6	3.8 154.9 24 24 20 27 39 86	3  January 24 23 15 100 143	(t) 6.5 1.6 1.5 .8 b7 15	8.3 11 9.7 8.6 8.1	February  18 28 23 16 10	3.1 0.4 .8 .6 .4 .2 s8.5	31 231.5 94 72 51 58 116	23  March 125 60 31 70 160	32 5 32 12 4.3 sb13 b50 4.4
1	3.8 154.9 24 24 20 27 39 66 51	3  January 24 23 15 100 143 182 41	(t) 6.5 1.6 1.5 .8 b7 15	8.3 11 9.7 8.6 8.1	February  18 28 23 16 10 64 105	3.1 0.4 .8 .6 .4 .2 s8.5 s18	31 231.5 94 72 51 58 116 68 49	23  March 125 60 31 70 160	32 12 12 4.3 sb13 b50 4.4 2.6
123455	3.8 154.9 24 24 20 27 39 66 51 36	3  January 24 23 15 100 143 182 41 22	1.6 1.5 .8 b7 15 s34 5.6 2.1	8.3 11 9.7 8.6 8.1 30 60	February  18 28 23 16 10 64 105 28	3.1 0.4 .8 .6 .4 .2 \$8.5 \$18 3.3	31 231.5 - 94 72 51 58 116 68 49 41	23  March 125 60 31 70 160 24 20	32 12 4.3 sb13 b50 4.4 2.6 1.9
12345	3.8 154.9 24 24 20 27 39 66 51	3  January 24 23 15 100 143 182 41	1.6 1.5 .8 b7 15 s34 5.6 2.1	8.3 11 9.7 8.6 8.1	February  18 28 23 16 10 64 105 28 127	3.1 0.4 .8 .6 .4 .2 \$8.5 \$18 3.3 \$29	31 231, 5 94 72 51 58 116 68 49 41 39	23  March 125 60 31 70 160 24 20 17	32 12 4.3 8b13 b50 4.4 2.6 1.9
12	3.8 154.9 24 24 20 27 39 66 51 36 30 25	3  January 24 23 15 100 143 182 41 22 14	(t) 6.5 1.6 1.5 .8 b7 15 s34 5.6 2.1 1.1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122	February  18 28 23 16 10 64 105 28 127 154	3.1 0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60	31 231, 5 94 72 51 58 116 68 49 41 39 35	23  March 125 60 31 70 160 24 20 17 18	32 12 4.3 8b13 8b50 4.4 2.6 1.9 1.9
11	3.8 154.9 24 24 20 27 39 66 51 36 30 25	3 January 24 23 15 100 143 182 41 22 14 14 13	(t) 6.5 1.6 1.5 .8 b7 15 \$34 5.6 2.1 1.1	8.3 11 9.7 8.6 8.1 30 60 44 46 122	February  18 28 23 16 10 64 105 28 127 154	3.1 0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60 s6.6	31 231.5	23  March 125 60 31 70 160 24 20 17 18 19	1.9 32.5 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a2
11	3.8 154.9 24 24 20 27 39 66 51 36 30 25	3 January 24 23 15 100 143 182 41 22 14 13 12	(t) 6.5 1.6 1.5 .8 b7 15 834 5.6 2.1 1.1	8.3 11 9.7 8.6 8.1 30 60 44 46 122	February  18 28 23 16 10 64 105 28 127 154 33 38	3.1 0.4 .8 .6 .4 .2 \$8.5 \$18 3.3 \$29 \$60	31 231.5 - 94 72 51 58 116 68 49 41 39 35 49	23  March 125 60 31 70 160 24 20 17 18 19	1.9 32.5 12 14.3 sb13 b50 4.4 2.6 1.9 1.9 a 2
11	3.8 154.9 24 24 20 27 39 66 51 30 25 22 20 19	3 January 24 23 15 100 143  182 41 22 14 14 13 13 12 13	(t) 6.5 1.6 1.5 .8 b7 15 8 34 5.6 2.1 1.1 .9	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30	February  18 28 23 16 10 64 105 28 127 154 33 38 52	3.1 0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60 s6.6 4.1 4.2	31 231.5	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119	1.9 32.5 12 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a 2
31	3,8 154,9 24 24 20 27 39 66 51 36 30 25 22 20 19	3 January 24 23 15 100 143 182 41 42 14 14 13 12 13 6	(t) 6.5 1.6 1.5 .8 b7 15 834 5.6 2.1 1.1 .9	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27	3.1  0.4  .8 .6 .4 .2  s8.5 s18 3.3 s 29 s60  s6.6 4.1 4.2 1.7	31 231.5 - 94 72 51 58 118 68 49 41 39 35 49 47 36 31	23	1.9 32.5 12 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 1.9 2 2 s18 16 12 9.4
11	3.8 154.9 24 24 20 27 39 66 51 30 25 22 20 19	3 January 24 23 15 100 143  182 41 22 14 14 13 13 12 13	(t) 6.5 1.6 1.5 .8 b7 15 8 34 5.6 2.1 1.1 .9	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30	February  18 28 23 16 10 64 105 28 127 154 33 38 52	3.1 0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60 s6.6 4.1 4.2	31 231.5	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119	1.9 32.5 12 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a 2
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	3,8 154,9 24 24 20 27 39 66 51 36 30 25 22 20 19 17	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5	(t) 6.5 1.6 1.5 .8 b7 15 s34 5.6 2.1 1.1 .9 .8 .6 .7 .3	8. 3 11 9. 7 8. 6 8. 1 30 60 44 45 122 68 40 30 23 20	February  18 28 28 23 16 10 64 105 28 127 154 33 38 52 27 17	3.1  0.4  .8 .6 .4 .2  s8.5 s18 3.3 s29 s60  s6.6 4.1 4.2 1.7 .9	31 231.5 - 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113	1.9 32.5 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a 2 s18 16 12 9.4 8.8
31	3.8 154.9 24 24 20 27 39 66 51 36 30 25 22 20 19 17 17	3 January 24 23 15 100 143 182 41 22 14 13 12 13 6 5	(t) 6.5 1.6 1.5 .8 b7 15 834 5.6 2.1 1.1 .9	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23	February  18 28 23 16 10  84 105 28 127 154 33 38 52 27 17	3.1  0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12	31 231.5 - 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113	1.9 32.5 32 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a2 s18 16 12 9.4 8.8
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	3,8 154,9 24 24 22 27 39 66 51 36 30 25 22 20 19 17 17	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5	(t) 6.5 1.6 1.5 8 b7 15 834 5.6 2.1 1.1 1.9 .8 .6 .7 .3 .2	8. 3 11 9. 7 8. 6 8. 1 30 60 44 44 46 122 68 40 30 23 20	February  18 28 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85	3.1  0.4 .8 .6 .4 .2 s3.5 s18 3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20	31 231.5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 2 s18 16 12 9.4 8.8 8.5 7.4
31	3.8 154.9 24 24 20 27 39 66 51 36 30 30 25 22 20 17 17 17 15 14 13 12	3 January 24 23 115 15 100 143 182 41 22 14 13 12 13 6 5 3 2 3 4	(t) 6.5 1.6 1.5 .8 b7 15 8 4 5.6 2.1 1.1 1.9 .8 .6 .7 .3 .2 .1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49	February  18 28 23 16 10  84 105 28 127 154 33 38 52 27 17	3.1  0.4 .8 .6 .4 .2 .88.5 s18 3.3 s 29 s60  s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7	31 231.5 - 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113	1.9 32.5 32 12 4.3 sb13 b50 4.4 2.6 1.9 1.9 a2 s18 16 12 9.4 8.8
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	3,8 154,9 24 24 22 27 39 66 51 36 30 25 22 20 19 17 17	3 January 24 23 15 100 143 182 41 42 14 13 12 13 6 5 3 2 3	(t) 6.5 1.6 1.5 8 b7 15 834 5.6 2.1 1.1 1.9 .8 .6 .7 .3 .2	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30	3.1  0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0	31 231.5 - 94 72 51 58 118 68 49 41 39 35 47 36 31 29 26 23 23	23	1.9 32.5 12 14.3 sb13 b50 4.4 2.6 1.9 1.9 2 s18 16 12 9.4 8.8 8.5 7.4 6.7
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	3.8 154.9 24 24 20 27 39 66 51 36 30 30 25 22 20 19 17 17 17 14 13 12 12	3 January 24 23 15 100 143 182 41 22 14 13 12 13 6 5 3 2 3 4 4	(t) 6.5 1.6 1.5 8 b7 15 8 4 5.6 2.1 1.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1 .1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35	February  18 28 28 21 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18	3.1  0.4 .8 .6 .4 .2 .88.5 s18 3.3 s 29 s60  s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7	31 231, 5 72 51 58 116 68 49 41 35 49 47 36 31 29 26 23 20 20	23	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a.2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a.3 .5
31	3.8 154.9 24 24 20 27 39 66 51 36 30 30 25 22 20 17 17 17 15 14 13 12	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5 3 2 2 3 4 4	(t) 6.5  1.6 1.5 .8 b7 15 s34 5.6 2.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1 .1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122	February  18 28 28 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10	3.1  0.4  .8 .6 .4 .2  s8.5 s18 3.3 s29 s60  s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48	31 231.5 - 94 72 51 58 116 68 49 41 39 35 47 36 31 29 26 23 20 20	23	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 2 2 518 16 12 9.4 8.8 8.5 7.4 6.7 2 3 5 8.99
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 22	3.8 154.9 24 24 22 27 39 66 51 38 30 25 22 20 19 17 17 15 14 13 12 11	3 January 24 23 51 51 100 143 182 41 22 14 13 12 13 6 5 3 2 3 4 4 3 3	(t) 6.5 1.6 1.5 .8 b7 15 8 34 5.6 2.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1 .1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35	February  18 28 28 21 16 10  64 105 28 127 154  33 38 52 27 17 65 85 30 18 10  147 92	3.1  0.4 .8 .6 .4 .2 .88.5 s18 3.3 s 29 s60  s6.6 4.1 4.2 1.7 9 sb 12 sb 20 4.0 1.7 .9 48 44	31 231, 5 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 20 20 120 263	23	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a.2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a.3 .5 s99 s242
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 18 17 18 19 20 21 22	3,8 154.9 24 24 22 27 39 66 51 36 30 25 22 20 19 17 17 15 14 13 12 12 10 9	3 January 24 23 15 100 143 182 41 14 13 12 13 6 5 3 2 3 4 4 4 3 3 3 3 3	(t) 6.5  1.6 1.5 8 b7 15  834 5.6 2.1 1.1 .9 .8 6.7 7 .3 .2 .1 .1 .1 .1 .1 .1 .1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65	February  18 28 28 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10	3.1  0.4 .8 .6 .4 .2 s8.5 s18 3.3 s 29 s60  s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3	31 231.5 - 94 72 51 58 116 68 49 41 39 35 47 36 31 29 26 23 20 20	23	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a 2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a 3 .5 s99 s242 19 5.3
31. Total.  1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24.	3.8 154.9 24 24 22 27 39 66 51 36 30 25 22 20 19 17 17 15 14 13 12 12 11	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5 3 4 4 3 3 3 3	(t) 6.5 1.6 1.5 .8 b7 15 834 5.6 2.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100	February  18 28 28 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38	3.1  0.4 8 8 6 4 2 88.5 818 3.3 8 29 860 86.6 4.1 4.2 1.7 9 8b12 8b20 4.0 1.7 9 48 44 10	31 231.5 - 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 23 20 20 120 263 112	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a 2  518 16 12 9.4 8.8 8.5 7.4 6.7 a 3 .5 s99 s242 19
31 Total.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 18 17 18 19 20 21 22	3.8 154.9 24 24 24 22 27 39 66 51 38 30 25 22 20 19 17 17 17 15 14 13 12 12 11 12 10 9 8	3 January 24 23 15 100 143 182 41 22 14 14 13 3 6 5 3 2 2 3 4 4 4 3 3 3 3 3 3	(t) 6.5  1.6 1.5 8 b7 15  834 5.6 2.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1 .1 .1 .1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27	3.1  0.4 .8 .6 .4 .2 s8.5 s18 3.3 s29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3 3.7	31 231.5 94 72 51 58 118 68 49 41 39 35 49 47 36 31 29 26 23 20 20 20 263 112 70 55	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a.2  \$18 18 12 9.4 8.8  8.5 7.4 6.7 a.3 5.5 \$99 \$242 19 5.3 3.3
31	3.8 154.9 24 24 24 20 27 39 66 51 36 30 32 25 22 20 17 17 17 15 14 13 12 12 12 10 9 8	3 January 24 23 15 100 143 182 41 22 14 14 14 13 12 13 6 5 3 2 2 3 4 4 4 3 3 3 3 3 3 7 7	(t) 6.5  1.6 1.5 8 b7 15  834 5.6 2.1 1.1 1.1 1.1 1.1 2.1 1.1 1.1 1.1 1.1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23	3.1  0.4 .8 .6 .4 .2 .88.5 s18 .3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3 3.7 2.8	31 231, 5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 20 20 20 20 25 55 51 58 58 58 58 58 58 58 58 58 58	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a3 .5 s99 s242 19 5.3 3.3
31	3.8 154.9 24 24 22 27 39 66 51 38 30 25 22 20 19 17 17 15 14 13 12 11 12 10 9 8 8	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5 3 2 3 4 4 3 3 3 3 7 10	(t) 6.5  1.6 1.5 8 b7 15  834 5.6 2.1 1.1 2.2 1.1 1.1 1.1 1.1 1.1 1.1 1.1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23 99	3.1  0.4 8 8 6 4 2 88.5 818 3.3 8 29 860 86.6 4.1 4.2 1.7 9 8b12 8b20 4.0 1.7 9 48 44 10 5.3 3.7 2.8 827	31 231.5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 20 20 2263 112 70 55 51	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23 33	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a2  8.18 16 12 9.4 8.8 8.5 7.4 6.7 a3 .5 s99 s242 19 5.3 3.3 3.2 3.6
31	3.8 154.9 24 24 24 20 27 39 66 51 36 30 25 22 20 19 17 17 15 14 13 12 12 12 12 19 8 8 7	3 January 24 23 15 100 143 182 41 22 14 13 12 13 6 5 3 2 3 4 4 3 3 3 3 7 10 20	(t) 6.5  1.6 1.5 8 b7 15 8 4 5.6 2.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23 99 118	3.1  0.4 .8 .6 .4 .2 .88.5 s18 .3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3 3.7 2.8	31 231, 5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 20 20 20 26 31 12 70 55 51 58 49 41 47 47 36 31 49 40 40 40 40 40 40 40 40 40 40	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23 33 33	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a.2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a.3 .5 s99 s242 19 5.3 3.3 3.2 3.6 3.5
31	3.8 154.9 24 24 24 20 27 39 66 51 36 30 25 22 20 17 17 15 14 13 12 12 11 12 12 10 9 8 8 7 7	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5 3 2 3 4 4 4 3 3 3 3 7 10 20 27	(t) 6.5  1.6 1.5 8 b7 15 834 5.6 2.1 1.1 2.2 2.4 4.5	101.1  8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51 45 93 78	February  18 28 28 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23 99 118	3.1  0.4 .8 .6 .4 .2 s3.5 s18 3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3 3.7 2.8 s27 25	31 231.5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 23 20 20 20 20 25 55 55 56 49 47 36 31 29 47 36 31 29 47 36 31 29 40 40 40 40 40 40 40 40 40 40	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23 33 33 17	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a 2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a 3 .5 s99 s242 19 5.3 3.3 3.2 3.6 3.5 2.0
31	3.8 154.9 24 24 20 27 39 66 51 38 30 25 22 20 17 17 15 14 13 12 12 12 10 9 8 8 7 7 7	3 January 24 23 15 100 143 182 41 22 14 14 13 3 6 5 3 2 3 4 4 4 3 3 3 3 7 10 20 27 7 22	(t) 6.5  1.6 1.5 .8 b7 15  834 5.6 2.1 1.1 .9 .8 .6 .7 .3 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	101.1 8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51	February  18 28 23 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23 99 118	3.1  0.4 8 8 6 4 2 88.5 818 3.3 8 29 860 86.6 4.1 4.2 1.7 9 8b12 8b20 4.0 1.7 9 48 44 10 5.3 3.7 2.8 827	31 231, 5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 20 20 20 20 55 51 49 41 39 35 49 41 47 36 31 29 20 20 20 20 20 20 20 20 20 20	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23 33 37 17	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a2  \$18 18 12 9.4 8.8 8.5 7.4 6.7 a3 .5 \$99 \$242 19 5.3 3.3 3.2 3.6 3.5 2.0 1.2
31	3.8 154.9 24 24 24 20 27 39 66 51 36 30 25 22 20 17 17 15 14 13 12 12 11 12 12 10 9 8 8 7 7	3 January 24 23 15 100 143 182 41 22 14 14 13 12 13 6 5 3 2 3 4 4 4 3 3 3 3 7 10 20 27	(t) 6.5  1.6 1.5 8 b7 15 834 5.6 2.1 1.1 2.2 2.4 4.5	101.1  8.3 11 9.7 8.6 8.1 30 60 44 46 122 68 40 30 23 20 41 81 49 36 35 122 177 100 65 51 45 93 78	February  18 28 28 16 10 64 105 28 127 154 33 38 52 27 17 65 85 30 18 10 147 92 38 30 27 23 99 118	3.1  0.4 .8 .6 .4 .2 s3.5 s18 3.3 s 29 s60 s6.6 4.1 4.2 1.7 .9 sb12 sb20 4.0 1.7 .9 48 44 10 5.3 3.7 2.8 s27 25	31 231.5 94 72 51 58 116 68 49 41 39 35 49 47 36 31 29 26 23 23 20 20 20 20 25 55 55 56 49 47 36 31 29 47 36 31 29 20 20 20 20 20 20 20 20 20 20	23 March 125 60 31 70 160 24 20 17 18 19 120 124 119 112 113 121 120 108 55 9 277 325 64 28 22 23 33 33 17	1.9 32.5  32 12 4.3 sb13 b50  4.4 2.6 1.9 1.9 a 2  s18 16 12 9.4 8.8 8.5 7.4 6.7 a 3 .5 s99 s242 19 5.3 3.3 3.2 3.6 3.5 2.0

s Computed by subdividing day.
t Less than 0.05 ton.
a Computed from estimated concentration graph.
b Computed from partly estimated concentration graph.

### OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

### LITTLE MIAMI RIVER BASIN -- Continued

### NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		April		The second second	Mo-	- John Harris	1 1000 00	T	
					May			June	
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	m
	charge	concen-	per	charge	concen-		charge	concen-	Tons
	(cfs)	tration	day	(cfs)	tration	per day	(cfs)	tration	per day
		(ppm)			(ppm)	L	(0.0,	(ppm)	
1	32	7	0.6	11	17	0.5	4.8	32	0.4
2	29	3	. 2	10	23	.6	4, 6	21	.3
3	26	3	. 2	10	17	.4	4.5	20	.2
4	23	3	.2	9.4	25	.6	4.3	20	.2
5	22	2	.1	8.8	30	.7	4.3	22	. 2
_		_	_	l		_			_
6	24 22	5 4 2	.3	8.3	27	.6	4.6	17	.2
7	19	1 3	a.2	8.3	13 13	.3	5.3	15	] . <u>2</u>
8	18	2	.1 .1	8.8		.3	5.6	14	.2 .2 .2
9 10	17	3	.1	8.1 7.8	17 15	.4 .3	5.1 5.3	15 42	.6
10		"		1.0	15		3.3	44	٠,٥
11	18	10	.5	7.8	18	.4	6.2	43	,
12	21	6	.3	7.6	13	8	6.2	42	.7 .7 .4
13	22	8	.5	7.8	8	.3	5, 8	28	' 4
14	20	5	.3	9.2	7	.2	5.6	44	. 6
15	18	7	.3	7.8	8	.2	5. 1	49	.6 .7
				l					
16	16	2	. 1	7.0	9	.2	4.6	53	.6
17	15	2	.1	6.8	8	1.1	4.3	55	. 6 . 5
18	14	3	.1	6, 6	9	. 2	4.0	47	. 5
19	15	2 2 3 2 2	.1	6.4	8	.1	4.0	50	.5 .8
20	16	2	.1	6.4	7	.1	4.0	71	.8
ا ،,	16	1 2	a.i	6.0	14	.2	4, 5	63	.8
21	15	2 2	a.1	6.0	30	.5	4.0	58	, o
22 23	14	2	1.1	6.4	31	.5	5.6	62	. 6 . 9
	17	6	.3	6.0	28	.4	5.6	35	
24 25	23	4	.2	5.8	35	.5	5.3	45	.5 .6
		1		l i				1	ł
26	19	3	.2	5.8	32	.5	5.0	43	.6
27	16	3	. 1	5.3	27	.4	4.3	52	. 6
28	14	4	. 2	5.4	18	. 3	3.9	62	. 6
29	13	7	.2	5.8	23	.4	3.7	53	. 5
30	12	9	. 3	5.3	27	.4	3, 5	44	.4
31				5.1	25	.3			
Total.	566		6.3	226.8		11.1	143.6		14.9
Total.	566	Tulm	6.3	226.8		11.1	143.6		14,9
		July			 August			 September	
1	3, 2	80	0.7	2.6	57	0.4	0.7	13	(t)
1	3, 2 3, 1	80 98	0.7	2. 6 2. 5	57 53	0.4	0.7	13 18	(t)
1	3, 2 3, 1 3, 6	80 98 97	0.7 .8 .9	2.6 2.5 2.4	57 53 49	0.4 .4 .3	0.7 .7 .7	13 18 34	(t) (t) 0.1
1	3.2 3.1 3.6 4.3	80 98 97 113	0,7 .8 .9	2.6 2.5 2.4 2.2	57 53 49 47	0.4 .4 .3	0.7 .7 .7 .7	13 18 34 42	(t) (t) 0.1 .1
1	3, 2 3, 1 3, 6	80 98 97	0.7 .8 .9	2.6 2.5 2.4	57 53 49	0.4 .4 .3	0.7 .7 .7	13 18 34	(t) (t) 0.1
1	3. 2 3. 1 3. 6 4. 3 3. 4 3. 2	80 98 97 113 123	0.7 .8 .9 1.3 1.1	2.6 2.5 2.4 2.2 2.0	57 53 49 47	0.4 .4 .3 .3 .3	0.7 .7 .7 .7	13 18 34 42	(t) (t) 0.1 .1
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8	80 98 97 113 123 98 83	0.7 .8 .9 1.3 1.1	2.6 2.5 2.4 2.2 2.0 1.9 2.5	57 53 49 47 52 48 43	0.4 .4 .3 .3 .3	0.7 .7 .7 .7 .6	13 18 34 42 53 38	(t) (t) 0.1 .1
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1	80 98 97 113 123 98 83 86	0.7 .8 .9 1.3 1.1 .8 1.5	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4	57 53 49 47 52 48 43 32	0. 4 . 4 . 3 . 3 . 3	0.7 .7 .7 .7 .6 .6	13 18 34 42 53 38 38 36	(t) (t) 0.1 .1 .1 .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5	80 98 97 113 123 98 83 86 74	0.7 .8 .9 1.3 1.1 .8 1.5 1.5	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0	57 53 49 47 52 48 43 32 30	0.4 .4 .3 .3 .3 .3 .2 .3	0.7 .7 .7 .6 .6 .6	13 18 34 42 53 38 38 36 47	(t) (t) 0.1 .1 .1
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1	80 98 97 113 123 98 83 86	0.7 .8 .9 1.3 1.1 .8 1.5	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4	57 53 49 47 52 48 43 32	0. 4 . 4 . 3 . 3 . 3	0.7 .7 .7 .7 .6 .6	13 18 34 42 53 38 38 36	(t) (t) 0.1 .1 .1 .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0	80 98 97 113 123 98 83 86 74 87	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0	57 53 49 47 52 48 43 32 30 31	0. 4 .4 .3 .3 .3 .2 .2	0.7 .7 .7 .7 .6 .6 .5 .5	13 18 34 42 53 38 38 36 47	(t) (t) 0.1 .1 .1 .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0	80 98 97 113 123 98 83 86 74 87	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8	57 53 49 47 52 48 43 32 30 31	0. 4 . 4 . 3 . 3 . 3 . 2 . 3 . 2 . 2 . 2	0.7 .7 .7 .7 .6 .6 .6 .5 .5	13 18 34 42 53 38 38 36 47 14	(t) (t) 0.1 .1 .1 .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0	80 98 97 113 123 98 83 86 74 87	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8	57 53 49 47 52 48 43 32 30 31	0. 4 . 4 . 3 . 3 . 3 . 2 . 2 . 2 . 2	0.7 .7 .7 .7 .6 .6 .6 .5 .5	13 18 34 42 53 38 38 36 47 14	(t) (t) 0.1 .1 .1 .1 (t)
123455	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 5.3	80 98 97 113 123 98 83 86 74 87 79 71 63	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8	57 53 49 47 52 48 43 32 30 31 32 32	0.4 .4 .3 .3 .3 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .5	13 18 34 42 53 38 38 36 47 14	(t) (t) 0.1 .1 .1 .1 (t)
1	3. 2 3. 1 3. 6 4. 3 3. 4 3. 2 6. 8 5. 1 4. 5 6. 0 5. 3 4. 0 3. 5 3. 4	80 98 97 113 123 98 83 86 74 87 79 71 63 63	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8 1.6 1.4	57 53 49 47 52 48 43 32 30 31 32 24 23	0.4 .4 .3 .3 .3 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6	13 18 34 42 53 38 38 36 47 14 5 12 11	(t) (t) (0.1 .1 .1 .1 .1 (t) .1
123455	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 5.3	80 98 97 113 123 98 83 86 74 87 79 71 63	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8	57 53 49 47 52 48 43 32 30 31 32 32	0.4 .4 .3 .3 .3 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .5	13 18 34 42 53 38 38 36 47 14	(t) (t) 0.1 .1 .1 .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 4.0	80 98 97 113 123 98 83 86 74 87 79 71 63 63	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8 1.6 1.4	57 53 49 47 52 48 43 32 30 31 32 24 23	0.4 .4 .3 .3 .3 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6	13 18 34 42 53 38 38 36 47 14 5 12 11	(t) (t) (0.1 .1 .1 .1 .1 (t) .1
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21	0. 4 .4 .3 .3 .3 .2 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .5 .5 .6 .1.0 .8 .7 .7	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 4.0 3.5	80 98 97 113 123 98 83 86 74 87 79 71 63 64 58 53	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53	0. 4 .4 .3 .3 .3 .2 .2 .2 .2 .2 .1 .1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6	13 18 34 42 53 38 36 47 14 5 12 11 26 48	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 53	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21	0. 4 .4 .3 .3 .3 .2 .2 .2 .2 .2 .1 .1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6	13 18 34 42 53 38 36 47 14 5 12 11 26 48 32	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 4.0 3.5	80 98 97 113 123 98 83 86 74 87 79 71 63 64 58 53	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .2	0.7 .7 .7 .7 .6 .6 .5 .5 .6 .5 .7 .7	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5 3.4 5.1 6.0	90 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8 1.4 1.3 1.3 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 21 23 47 53 52 42	0. 4     .4     .3     .3     .3     .2     .2     .2     .2     .1     .1     .1     .2     .2     .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6	13 18 34 42 53 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.6 3.6 3.6 3.5 4.0	80 98 97 113 123 98 83 86 74 87 79 71 63 63 63 64 58 50 50 51 60	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 52 42	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1 .1 .1	0.7 .7 .7 .6 .6 .5 .5 .6 .5 .7 .7 .6	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.5 4.0 3.6 4.0 3.7	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.3 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 47 53 42 42 30	0. 4	0.7 .7 .7 .7 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .6 .5 .5 .5 .6	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.6 4.0 3.6 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 53 50 51 60 67 61	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .6 .6 .6 .6 .6 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.2 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 52 42 33 30 31	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1	0.7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6	13 18 34 42 53 38 38 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) (0.1 .1 .1 .1 .1 (t) .1 (t) .1 (t)
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 4.0 3.5 4.0 3.7 3.7 3.9 4.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 61 62 64	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .7 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.2 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 33 52 42 33 52 42 33	0. 4     . 4     . 3     . 3     . 3     . 2     . 2     . 2     . 2     . 2     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1     . 1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .6 .5 .5 .5 .6 .5 .5 .5 .6 .5 .5 .6 .6 .5 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.6 4.0 3.6 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 3.6 4.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 53 50 51 60 67 61	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .6 .6 .6 .6 .6 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.2 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 52 42 33 30 31	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1	0.7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6	13 18 34 42 53 38 38 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t)
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 3.5 4.0 3.5 4.0 3.5 4.0 3.7 3.7 3.9 4.5 4.5	80 98 97 113 123 98 83 86 74 87 79 71 63 64 58 53 50 51 60 67 61 43 49	0.7 .8 .9 1.3 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .7 .8 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 52 42 33 30 31 33 47 53 52 42 33 53 53 53 53 53 53 53 53 53 54 54 54 54 54 54 54 54 54 54 54 54 54	0. 4	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .6 .5 .5 .6 .5 .5 .6 .6 .5 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t)
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 0 3.5 4.0 3.6 4.0 5.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 60 67 61 43 49 67	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8 1.4 1.3 1.3 1.3 1.3 1.3 1.3 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 47 52 47 52 42 33 30 31 47 52 42 42 42 42 43	0.4     .4     .3     .3     .3     .2     .2     .2     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6	13 18 34 42 53 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	80 98 97 113 123 98 83 86 74 87 79 71 63 64 58 53 50 51 60 67 61 43 49	0.7 .8 .9 1.3 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7 .8 .6 .6 .6 .6 .6 .6 .7 .6 .7 .6 .7 .6 .7 .6 .7 .7 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 52 42 30 31 32 33 47 53 53 53 53 53 53 53 53 53 53 53 53 53	0.4     .4     .3     .3     .2     .2     .2     .2     .1     .1     .1     .1     .1     .1     .1     .1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .5 .5 .5 .6 .5 .5 .6 .5 .5 .6 .6 .5 .5 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 34 42 53 38 36 47 14 5 12 11 26 48 32 18 11 6 9 17 11 12 12 3 3 3 8	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t)
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 0 3.5 4.0 3.6 4.0 5.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 60 67 61 43 49 67	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .5 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.8 1.4 1.3 1.3 1.3 1.3 1.3 1.3 1.1	57 53 49 47 52 48 43 32 30 31 32 24 23 47 52 47 52 42 33 30 31 47 52 42 42 42 42 43	0.4     .4     .3     .3     .3     .2     .2     .2     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6	13 18 34 42 53 38 36 47 14 5 12 11 26 48 32 18 11 6 9	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.4 3.5 3.6 3.6 3.7 3.7 3.7 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 53 50 51 60 67 61 43 49 67 62 63 77	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .6 .6 .6 .6 .5 .5 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.4 1.3 1.3 1.3 1.3 1.3 1.3 1.1 1.0 1.0 1.3 1.5 1.3	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 53 47 53 42 42 33 30 31 47 52 42 42 43 47 53 47 53 47 53 47 53 53 53 53 53 53 53 53 53 53 53 53 53	0.4     .4     .3     .3     .3     .2     .2     .2     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .6 .5 .5 .5 .6 .1.0 .8 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 6 9 17 11 12 12 3 8 8 8	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.5 4.0 3.6 4.0 3.7 3.9 4.5 5.1	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 60 67 61 43 49 67 62 62 63 63	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7 .7 .6 .6 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.3 1.1 1.0 1.3 1.5 1.5	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 30 32 47 52 42 33 47 52 42 30 31 47 53 47 53 54 47 53 54 54 54 54 54 54 54 54 54 54 54 54 54	0.4     .4     .3     .3     .3     .2     .2     .2     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1     .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .7 .6 .6 .5 .5 .6 .5 .5 .6 .6 .5 .5 .6 .6 .5 .5 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9 17 11 12 12 12 13 14 8	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.0 3.5 3.4 5.3 4.0 3.6 3.5 4.0 3.7 3.9 4.5 5.0	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 60 67 61 43 49 67 62 63 77 63 63 64	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .5 .5 .5 .7 .7 .8 .6 .7 .6 .7 .6 .7 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.1 1.0 1.3 1.5 1.1 1.0 1.3 1.5 1.3 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 33 30 32 42 42 33 30 47 52 42 42 42 42 42 42 42 42 42 42 43 43 43 43 44 43 44 43 44 43 44 44 44	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6 .5 .5 .6 .1 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 6 9 17 11 12 12 3 8 8 8	(t) (t) (t) 0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 (t)
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.5 3.5 3.4 3.5 3.5 3.4 3.5 4.0 3.6 3.5 4.0 3.7 3.9 4.5 4.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 64 58 53 50 51 60 67 61 43 49 67 62 67 63 63 64	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7 .7 a.6 .7 .6 .7 .6 .7 .7 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.1 1.0 1.3 1.5 1.5 1.5 1.5 1.6 1.5 1.6 1.6 1.7 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 33 30 32 42 42 33 30 47 52 42 42 42 42 42 42 42 42 42 42 43 43 43 43 44 43 44 43 44 43 44 44 44	0.4 .4 .3 .3 .2 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1	0.7 .7 .7 .7 .6 .6 .6 .5 .5 .6 .1.0 .8 .7 .7 .6 .6 .5 .5 .5 .6 .1.0 .8 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9 17 11 12 12 12 12 13 8 8 8 7	(t) (t) (t) (0.1 .1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .
1	3.2 3.1 3.6 4.3 3.4 3.2 6.8 5.1 4.5 6.0 3.5 4.0 3.5 4.0 3.7 3.9 4.5 4.0 3.7 3.9 4.0 3.7	80 98 97 113 123 98 83 86 74 87 79 71 63 64 58 53 50 51 60 67 61 43 49 67 62 63 63 64 57 67 67 67 67 67 67 67 67 67 6	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7 .7 a.6 .7 .6 .7 .6 .7 .7 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.1 1.0 1.3 1.5 1.1 1.0 1.3 1.5 1.3 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 33 30 32 42 42 33 30 47 52 42 42 42 42 42 42 42 42 42 42 43 43 43 43 44 43 44 43 44 43 44 44 44	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6 .5 .5 .6 .1 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9 17 11 12 12 12 12 13 8 8 8 7	(t) (t) (0.1 .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1
1	3.2 3.1 3.6 4.3 3.2 6.8 5.1 4.5 6.0 5.3 4.5 3.5 3.4 3.5 3.5 3.4 3.5 4.0 3.6 3.5 4.0 3.7 3.9 4.5 4.5	80 98 97 113 123 98 83 86 74 87 79 71 63 63 63 64 58 53 50 51 60 67 61 43 49 67 67 63 67 67 67 67 67 67 67 67 67 67	0.7 .8 .9 1.3 1.1 .8 1.5 1.2 .9 1.4 1.1 .8 .6 .6 .6 .6 .5 .5 .7 .7 a.6 .7 .6 .7 .6 .7 .7 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	2.6 2.5 2.4 2.2 2.0 1.9 2.5 2.4 2.0 1.8 1.6 1.4 1.3 1.3 1.3 1.3 1.1 1.0 1.3 1.5 1.1 1.0 1.3 1.5 1.3 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	57 53 49 47 52 48 43 32 30 31 32 24 23 19 21 33 47 52 42 33 30 32 42 42 33 36 42 38 32 42 42	0.4 .4 .3 .3 .3 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.7 .7 .7 .7 .6 .6 .5 .5 .6 1.0 .8 .7 .7 .6 .6 .5 .5 .6 .5 .5 .6 .1 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	13 18 18 34 42 53 38 38 36 47 14 5 12 11 26 48 32 18 11 6 9 17 11 12 12 12 12 13 8 8 8 7	(t) (t) (t) (1) .1 .1 .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 (t) .1 .1 (t) .1 .1 (t) .1 .1 (t) .1 .1 (t) .1 .1 (t) .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1

t Less than 0.05 ton.
a Computed from estimated concentration graph.

LITTLE MIAMI RIVER BASIN -- Continued

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decantation; P. pipette; S. sieve; N. in native water;

		Methods of '		BSWCM	BSWCM	BSWCM
			1.000			
			0.500			
			0.350			
		llimeters	0,250			100
		ze, in mil	0.125	100	100	66
(pas		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350 0.500 1.000	66	66	66
ılly disper	diment	er than ın	0. 031	86	66	97
mechanica	Suspended sediment	ercent fin	0.016	95	86	96
sed; M,	ng	4	0.008	87	97	88
ully disper			0.004	78	93	84
, chemics			0.002	26	68	83
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	1,140	489	608
W, in di		Concentration	of sample (ppm)	502	184	449
	Water	tem-	ature (°F)		_	
		Discharge (cfs)		140	163	368
		Time		12:35 a. m.	3:15 p. m.	10:05 a.m.
	Ġ	Date of collection		Feb. 10, 1955 12:35 a.m.	Feb. 21	Mar. 22

### LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO

LOCATION.--At gaging station at bridge on U. S. Highway 68, 0.9 mile upstream from Massie Creek, 1.3 miles northeast of Oldtown, Greene County, and 4.5 miles north of Xenia

DRAINAGE AREA.--129 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1947 to August 1948, August 1952 to September 1954.

September 1954.
Water temperatures: August 1952 to September 1955.
Sediment records: August 1952 to September 1955.
EXTREMES, 1954-55.--Water temperatures: Maximum, 81°F July 28; minimum, freezing point on many days during December to March.
Sediment concentrations: Maximum daily, 608 ppm Mar. 22; minimum daily, 2 ppm on several days during November to January.
Sediment loads: Maximum daily, 2,440 tons Mar. 22; minimum daily, 0.1 ton Nov.3,

several days during November to January.

Sediment loads: Maximum daily, 2,440 tons Mar. 22; minimum daily, 0.1 ton Nov.3,

Dec. 1-2, 16-17.

EXTREMES, 1952-55. --Water temperatures: Maximum, 81°F July 28, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 1,370 ppm June 8, 1954; minimum daily, less than 0.5 ppm on several days during Octoher to December, 1952.

Sediment loads: Maximum daily, 13,600 tons June 8, 1954; minimum daily, less than 0.05 ton on many days during October to December 1952, December 1953, and January 1954.

REMARKS.--Flow affected by ice Jan. 24 to Feb. 6, Feb. 13-15. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

				Once-da	ly measu	rement at	approxim	ately 7 a.	<b>m.</b> 7			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	42	40	39	32	50	45	61	61	71	77	64
2	70	40	38	42	32	41	48	60	61	73	77 78	63
3	70	40	36	42	32	42	50	61	64		79	65
4	70	40	36	45	32	48	49	63	65	73	79	71
5	70	40	36	46	32	48	50	65	67	73	80	67
6	65	40	32	48	32	42	55	62	69	75	80	68
7	55	40	42	43	33	36	53	61	68	75	80	67
8	54	40	32	40	32	35	45	60	64	74	79	63
9	58	42	35	40	32	40	47	55	62	75	73	65
10	61	42	32	40	32	45	50	58	63	71	76	70
11	65	41	32	38	35	50	52	59	62	71	75	69
12	64	45	37	37		50	55	55	63	70	72	62
13	66	42	33	34	32	47	59	60	61	71	71	58
14	67	45	33	33	32	43	60	58	58	74	69	62
15	62	43	36	34	32	49	58	59	58	74	68	66
16	55	43	35	33	32	49	53	61	62	73	73	67
17	51	45	36	32	32	42	59	60	65	75	74	68
18	49	50	37	32	32	40	58	56	68	74	77	69
19	47	53	34	32	36	40	62	58	70	74	74	67
20	45	52	33	32	40	42	60	62	71	74	76	68
21	47	47	32	33	41	49	61	64	69	73	77	67
22	36	45	32	33	36	50	59	67	67	74	75	68
23	48	45	32	32	34	35	60	66	68	76	72	67
24	48	43	33	32	37	45	60	67	65	75	69	66
25	49	41	32	32	39	43	59	67	68	73	68	62
26	55	40	35	32	40	39	55	64	63	75	69	61
27	57	40	36	32	42	33	52	67	64	78	70	61
28	49	39	44	32	47	32	50	68	65	81	73	63
29	50	40	42	32		38	55	66	67	75	72	62
30	46	36	40	32		40	59	64	70	76	75	62 65
31	43		38	32		43		59		77	69	
lver-	56	40				1						
age	96	43	36	36	35	43	55	62	65	74	74	65

### LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955.

		October	•	,,	Novem	ber	1	Decem	ber
	Mean	Suspende	d sediment	Maan	Suspende	d sediment	Mean	Suspende	d sediment
Day	dis-	Mean	Tons	Mean dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen-	per	charge	concen-	per
	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	12	12	0,4	20	5	0.3	24	2	0.1
2	13	11	.4	21	4	.2	23	2	.1
3	14	14	.5	21	2	.1	23	4	. 2
4	28 21	16 13	1,2	21	3	.2	23 22	5 4	.3 .2
5	21	13	.7	22	3	.2	- 44	*	٠.
6	33	18	1.6	21	6	.3	21	11	. 6
7	29 21	19	1.5	21	8	.4	19	3	.2
8 9	18	11 10	.6 .5	21 20	8	.4	19 21		]
10,	16	10	.4	20			22		H
	••								
11 12	20 71	19 72	a 1.4 14	19 18			20 20		e.2
13	49	37	4.9	18		-	22		II
14	45	50	sa.8	18		[] [	24		
15	81	94	s 22	18	4	e.2	25		)
16	54	43	6.3	18			25	2	.1
17	57	23	3, 5	18		1	25	_ ž	.î
18	45	18	2.2	18			27	4	. 3
19	36	22	2.1	18			28	12	.9
20	31	23	1.9	18			26	11	.8
21	28	23	1.7	17		y I	23	12	.7
22	26	25	1.8	16	5	.2	22	10	. 6
23	24	25	1.6	16	6	.2	25	13	.9
24 25	24 21	22 21	1.4 1.2	19 21	6 5	.3 .3	25 24	13 12	. 9 . 8
			1 1						
26	21	19	1.1	20	4	.2	23	15	. 9
27 28	22 21	15 19	.9 1.1	21 24	5 7	.3	24 91	16 48	1.0 s 21
29	22	13	8.	26	15	1.0	231	90	56
30	22	10	.6	25	5	.3	244	65	43
31	21	9	. 5				167	31	14
Total.	946		86.8	594		7.9	1, 358		145.3
		Januar			Februa			March	
1	131	15	5.3	41	3	0.3	381		e 180
3	130 110	20 25	7.0 7.4	50 45	3 3	.4	312 221	133 50	s 118 30
4	136	23	8,4	40	3	.4 .3	456		e 700
5	192	36	19	35	7	.7	932	581	s 1, 630
6	295	115	92	200	110	sa 90	408	101	s 120
7	244	88	58	394	201	211	275	48	36
8	167	33	15	248	55	s41	211	42	24
9	139	34	13	236	58	s 52	188	40	20
10	117	28	8.8	450	281	s 376	167	47	21
11	101	18	4.9	288	56	44	215	116	s 74
12	90	13	3.2	139	30	11	221	110	66
13 14	85	5	1.1	130 100	14	4.9	167	63 48	28
15	74 72	5 2	1.0 .4	90	15 11	4.0 2.7	143 136	39	18 14
١,, ا	45								
16 l	65 62	2 2	.4 .3	198 317	55 81	sa 45 s 75	126 110	39 27	13 8. 0
18	55	2	.3	223	38	23	107	15	4.3
19	53	2	.3	165	22	9.8	101	18	4.9
20	49	3	.4	151	30	12	98	19	5.0
21	49	5	.6	536	242	350	607	326	s 591
22	49	2	.3	880	237	563	1,490	608	2, 440
23	47	2	.2	450	91	110	513	140	s 209
24 25	40 35	4 2	.4 .2	284 221	56 37	43 22	317 246	60 40	51 26
			ا * ا	241	31	44	240	***	40
26	35	2	.2	194	37	19	221	23	14
27 28	30 30	3 4	.2 .3	414 355	118 103	s 139 99	168 172	11 10	5.0 4.6
29	30	4	3	300	103	99	184	23	11
30	30	3	.3				184 174	23 25	12 10
31	30	3	.2				156	25	
Total.	2,771		249.3	6, 874		2,348.5	9, 223		6, 487. 8
e Estim	atea.								

e Estimated. s Computed by subdividing day. a Computed from partly estimated concentration graph.

### VITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		April			May			June	
1		Suspende	d sediment			d sediment		Suspende	d sediment
Day	Mean dis-	Mean	Tons	Mean dis-	Mean	Tons	Mean dis-	Mean	
· 1	charge	concen-	per	charge	concen-	per	charge	concen-	Tons per
Į.	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tration	day
-		(ppm)			(ppm)			(ppm)	
1	144	30	12	57	20	3.1	28	25	1.9
2 3	133 123	30 27	11 9, 0	56	26 23	3.9	28	22	1.7
4	110	27	8.0	54 53	17	3. 4 2. 4	26 25	22 22	1, <b>5</b> 1, 5
5	100	23	6.2	50	17	2.4	25	22	1. 4
									•••
6	112	34	10	47	12	1.5	25	18	1.2
7	104	24	6.7	47	15	1.9	28	18	1.4
8 9	101 88	12 12	3.3	48	13	1.7	31	23	1, 9
10	83	18	2.8 4,0	46 46	11 10	1, 4 1, 2	29 29	20 29	1.6
1		10	1	1 10	10	1.2	25	29	2.3
11	85	18	4.1	46	10	1.2	33	34	3.0
12	115	22	6.8	44	13	1, 5	33	30	2, 7
13	101	38	10	45	13	1.6	34	27	2. 5
14 15	94 88	35 32	8.9	48	12	1.6	33	33	2.9
	90	32	7.6	46	14	1.7	31	28	2, 3
16	81	32	7.0	41	13	1.4	27	32	2.3
17	76	27	5, 5	39	15	1,6	25	28	1.9
18	71	21	4.0	38	15	1,5	24	25	1.6
19	72	18	3.5	37	23	2.3	23	27	1. 7
20	78	27	5, 7	37	25	2.5	22	30	1. 8
21	79	22	4,7	36	20	1.9	27	27	2.0
22	74	17	3.4	37	35	3.5	24	27	1.7
23	70	17	3.2	37	30	3, 0	31	26	2, 2
24	81	18	3.9	36	29	2.8	34	27	2, 5
25	94	18	4.6	35	29	2.7	32	32	2.8
26	83	12	2, 7	34	27	2,5	34	30	2, 8
27	74	8	1.6	33	30	2.7	28	27	2.0
28	68	10	1.8	31	27	2.2	25	28	1.9
29	63	28	4.8	33	27	2.4	23	35	2. 2
30	60	25	4.0	33	27	2.4	21	29	1.6
31 Total	2, 705			30	27	2.2			<del></del>
10041.	2, 103		170.8	1, 300		68.0	838		60.8
		July	I		August				
								S:ptember	
1	21	27	1.5	16	34	1.5	8.3	33	0.7
2	20	27 35	1,9	15	41	1.7	8,0	33 30	. 6
3	20 22	27 35 37	1.9 2.2	15 14	41 38	1.7 1.4	8, 0 7, 6	33 30 28	. 6 . 6
2	20	27 35 37 37	1.9 2.2 3.4	15 14 13	41 38 32	1.7 1.4 1.1	8. 0 7. 6 8. 3	33 30 28 20	. 6 . 6 . 4
2 3 4 5	20 22 34 26	27 35 37 37 37	1.9 2.2 3.4 2.6	15 14 13 13	41 38 32 31	1.7 1.4 1.1 1.1	8. 0 7. 6 8. 3 8. 0	33 30 28 20 18	. 6 . 6
2	20 22 34 26	27 35 37 37 37 37	1.9 2.2 3.4 2.6	15 14 13 13	41 38 32 31	1.7 1.4 1.1 1.1	8, 0 7, 6 8, 3 8, 0	33 30 28 20 18	.6 .6 .4 .4
2	20 22 34 26 23 22	27 35 37 37 37 37 40	1.9 2.2 3.4 2.6 2.5 3.4	15 14 13 13 13 12	41 38 32 31 33 27	1.7 1.4 1.1 1.1 1.2	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3	33 30 28 20 18 17	.6 .6 .4 .4
2	20 22 34 26 23 22 28	27 35 37 37 37 37	1.9 2.2 3.4 2.6 2.5 3.4 2.5	15 14 13 13 13 12 12	41 38 32 31 33 27 25	1.7 1.4 1.1 1.1 1.2 .9	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0	33 30 28 20 18 17 16	.6 .6 .4 .4
2	20 22 34 26 23 22 28 57	27 35 37 37 37 37 40 57	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30	15 14 13 13 13 12 12 12	41 38 32 31 33 27 25 35	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3	33 30 28 20 18 17 16 18	.6 .6 .4 .4 .4 .4
2 3 5 6 7 8 9	20 22 34 26 23 22 28 57 75	27 35 37 37 37 37 40 57 33	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35	15 14 13 13 13 12 12 12 12	41 38 32 31 33 27 25 35 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1	8. 0 7. 6 8. 3 8. 0 8. 3 8. 0 7. 3	33 30 28 20 18 17 16 18 13	.6 .6 .4 .4 .4 .4 .2
2	20 22 34 26 23 22 28 57 75	27 35 37 37 37 37 40 57 33 	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35	15 14 13 13 13 12 12 12 12 13	41 38 32 31 33 27 25 35 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3 7. 3	33 30 28 20 18 17 16 18 13	.6 .6 .4 .4 .4 .4 .2 .2
2	20 22 34 26 23 22 28 57 75	27 35 37 37 37 37 40 57 33  170	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35	15 14 13 13 13 12 12 12 12 13	41 38 32 31 33 27 25 35 28 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3 7. 3	33 30 28 20 18 17 16 18 13 10	.6 .6 .4 .4 .4 .2 .2
2	20 22 34 26 23 22 28 57 75 54 38 31	27 35 37 37 37 37 40 57 33  170 83 95	1.9 2.2 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7	15 14 13 13 13 12 12 12 12 13 13 12 10	41 38 32 31 33 27 25 35 28 28 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0	8. 0 7. 6 8. 3 8. 0 8. 0 7. 3 7. 3 8. 7 10	33 30 28 20 18 17 16 18 13 10	.6 .6 .4 .4 .4 .2 .2 .2
2	20 22 34 26 23 22 28 57 75	27 35 37 37 37 37 40 57 33  170 83 95 56 48	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 3.4	15 14 13 13 13 12 12 12 12 13 13 13 12 10	41 38 32 31 33 27 25 35 28 24 24 20 20	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3 7. 3 8. 7	33 30 28 20 18 17 16 18 13 10 16 27 27	.6 .6 .4 .4 .4 .4 .2 .2 .2
2	20 22 34 26 23 22 28 57 75 54 31 26 24	27 35 37 37 37 37 40 57 33  170 83 95 48 40	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 3.4 2.6	15 14 13 13 13 12 12 12 13 13 13 12 10 10 9, 8	41 38 32 31 33 27 25 35 28 24 24 20 20	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5	8. 0 7. 6 8. 3 8. 0 8. 3 8. 0 7. 3 7. 3 8. 7 10 9. 8 8. 7	33 30 28 20 18 17 16 18 13 10 16 27 27 17	.6 .6 .4 .4 .4 .4 .2 .2 .2 .4 .7 .7
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24	27 35 37 37 37 37 40 57 33  170 83 95 56 48	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 3.4 2.6	15 14 13 13 13 12 12 12 13 13 12 10 10 9.8	41 38 32 31 33 27 25 35 28 24 20 22 20 22	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3 7. 3 8. 7 10 9. 8 8. 7	33 30 28 20 18 17 16 18 13 10 16 27 27 27 11	.66 .44 .4 .4 .2 .2 .4 .7 .7 .4 .2 .3
2	20 234 26 23 22 28 57 75 54 31 26 24 23	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 3.4 2.6	15 14 13 13 12 12 12 12 13 13 12 10 10 9.8 9.8	41 38 32 31 33 27 25 35 28 28 24 20 20 22 31	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6	8. 0 7. 6 8. 3 8. 0 8. 0 8. 3 8. 0 7. 3 7. 3 7. 3 8. 7 10 9. 8 8. 7 8. 8	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11	.66 .44 .44 .42 .22 .44 .77 .74 .23
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 23 22 20	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 3.4 2.6	15 14 13 13 13 12 12 12 12 13 13 12 10 9.8 9.8 9.8 9.8	41 38 32 31 33 27 25 35 28 24 20 22 20 22 31 32 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6	8.0 7.6 8.3 8.0 8.0 8.3 8.0 7.3 7.3 7.3 8.7 10 9.8 8.7 8.3 8.0 7.6	33 30 28 20 18 17 16 18 13 10 16 27 27 27 17 11	.6 .6 .4 .4 .4 .2 .2 .7 .7 .7 .4 .2
2	20 234 26 23 22 28 57 75 54 31 26 24 23	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a 35 12 9.7 4.7 3.4 2.6 2.1 1.7 2.2	15 14 13 13 13 12 12 12 13 13 12 10 10 10 9.8 9.8 9.8 9.8	41 38 32 31 33 27 25 35 28 24 20 20 20 22 31 32 28 28	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .5 .6	8. 0 8. 3 8. 0 8. 3 8. 0 8. 3 8. 0 7. 3 8. 7 10 9. 8 8. 7 8. 7 10 9. 8 8. 7 6. 9	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12	. 6 . 4 . 4 . 4 . 4 . 2 . 2 . 4 . 7 . 7 . 4 . 2 . 2 . 3 . 2 . 2 . 2
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 23 22 20 20	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31 38 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35	15 14 13 13 13 12 12 12 13 13 12 10 10 9.8 9.8 9.8 9.8 9.8	41 38 32 31 33 27 25 35 28 24 20 20 20 22 23 31 32 33 35 35 35 35 35 36 37 38 38 38 39 30 30 30 30 30 30 30 30 30 30	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .5 .6 .8 .8 .7 .7	8. 0 8. 3 8. 0 8. 3 8. 0 7. 3 8. 7 10 9. 8 8. 7 10 9. 8 8. 7 6. 9	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 12 11 13	. 6 . 4 . 4 . 4 . 4 . 2 . 2 . 4 . 7 . 7 . 4 . 2 . 2 . 3 . 2 . 2 . 2 . 2 . 3
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 23 22 20 22 20 22	27 35 37 37 37 37 40 57 33  170 83 95 64 40 38 36 31 38 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e 30 a 35 12 9.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8	15 14 13 13 12 12 12 12 13 13 12 10 10 9. 8 9. 8 9. 8 9. 8 9. 8	41 38 32 31 33 27 25 35 28 24 20 20 22 31 32 32 33 41	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7	8.0 7.6 8.3 8.0 8.3 8.3 8.0 7.3 8.7 10 10 9.8 8.7 6.9 6.9	33 30 28 20 18 17 16 18 13 10 16 27 27 27 17 11 12 12 12 11 13 14	.66 .44 .4 .4 .2 .2 .4 .7 .7 .4 .2 .3 .2 .2 .2 .3 .2 .2 .3 .2
2	20 22 34 26 23 22 28 57 75 54 38 31 22 26 24 23 22 20 22 20 22	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31 38 34 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35  12 9.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8 1.8	15 14 13 13 12 12 12 12 13 13 11 10 9, 8 9, 8 9, 8 9, 8 9, 1 8, 3	41 38 32 31 33 27 25 35 28 24 20 20 22 31 32 28 28 30 41 60	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7	8. 0 8. 3 8. 0 8. 3 8. 0 7. 3 8. 7 10 9. 8 8. 7 10 9. 8 8. 7 7. 6 6. 9 6. 9	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 12 11 13 14	.66 .44 .4 .4 .2 .2 .4 .7 .4 .2 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .3 .2 .4 .4
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 20 20 18 17	27 35 37 37 37 37 40 57 37  170 83 95 48 40 38 31 31 32 33 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 12 9.7 4.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8	15 14 13 13 12 12 12 12 13 13 12 10 10 9. 8 9. 8 9. 8 9. 8 9. 8 9. 1 8. 3	41 38 32 31 33 27 25 35 28 24 20 20 22 28 28 28 28 28 29 41 60 60 61 61 61 61 61 61 61 61 61 61	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .7 .7 .7	8.0 7.6 8.3 8.0 8.3 8.0 7.3 7.3 8.7 10 9.8 8.7 6.9 7.3 9.1 12	33 30 28 20 18 16 16 13 10 16 27 27 17 11 12 12 11 13 14	. 6 . 4 . 4 . 4 . 4 . 2 . 2 . 4 . 7 . 7 . 4 . 2 . 2 . 2 . 2 . 2 . 3 . 2 . 2 . 2 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 23 22 20 22 20 18 17 18	27 35 37 37 37 37 40 57 33 3- 170 83 56 48 40 38 36 31 38 34 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e 30 a 35 12 9.7 4.7 2.6 2.4 2.1,17 2.2 1.8 1.6 1.3	15 14 13 13 12 12 12 12 13 13 12 10 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8	41 38 32 31 33 27 25 35 28 24 20 22 22 31 32 28 28 24 20 22 31 32 33 41 60 47 47 47 47 47 47 47 47 47 47	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7	8.0 7.6 8.3 8.0 8.3 8.3 7.3 7.3 8.7 10 10 8.7 8.7 8.3 8.7 7.6 6.9 6.9 7.3 9.1 12	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 16 22 20	.6644442224222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 20 20 18 17	27 35 37 37 37 37 40 57 37  170 83 95 48 40 38 31 31 32 33 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 12 9.7 4.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8	15 14 13 13 12 12 12 12 13 13 12 10 10 9. 8 9. 8 9. 8 9. 8 9. 8 9. 1 8. 3	41 38 32 31 33 27 25 35 28 24 20 20 22 28 28 28 28 28 29 41 60 60 61 61 61 61 61 61 61 61 61 61	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .7 .7 .7	8.0 7.6 8.3 8.0 8.3 8.0 7.3 7.3 8.7 10 9.8 8.7 6.9 7.3 9.1 12	33 30 28 20 18 16 16 13 10 16 27 27 17 11 12 12 11 13 14	. 6 . 4 . 4 . 4 . 4 . 2 . 2 . 4 . 7 . 7 . 4 . 2 . 2 . 2 . 2 . 2 . 3 . 2 . 2 . 2 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 20 18 17 18 18	27 35 37 37 37 37 40 57 33 95 56 48 40 38 36 31 38 34 34 33 34 34 34 34 34 34 34 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e 30 a 35 12 9.7 4.7 2.6 2.4 2.1,17 2.2 1.8 1.6 1.3	15 14 13 13 12 12 12 12 13 13 12 10 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8 9, 8	41 38 32 31 33 27 25 35 28 24 20 22 22 31 32 28 28 24 20 22 31 32 33 41 60 47 47 47 47 47 47 47 47 47 47	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7 .7	8.0 7.6 8.3 8.0 8.3 8.3 7.3 7.3 8.7 10 10 8.7 8.7 8.3 8.7 7.6 6.9 6.9 7.3 9.1 12	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 16 22 20	.66 .64 .4 .4 .4 .2 .2 .4 .7 .7 .4 .2 .2 .3 .2 .2 .2 .2 .2 .3 .2 .2 .2 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 23 22 20 22 20 18 18 18 17 16	27 35 37 37 37 37 37 40 57 37 170 83  170 83 40 38 40 31 38 36 31 32 32 34 33 34 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35 12 9.7 4.7 2.6 2.4 2.1 1.7 2.2 1.8 1.6 1.5 2.0 1.8	15 14 13 13 12 12 12 12 13 13 12 10 10 9. 8 9. 8 9. 8 9. 8 9. 8 9. 8 9. 1 8. 3	41 38 32 31 33 27 25 35 28 24 20 20 22 28 28 28 28 28 29 41 60 47 37 35 35 35 35 35 35 35 35 35 35	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .7 .7 .7 .7	8.0 7.6 8.3 8.0 8.3 8.3 7.3 8.7 10 10 9.8 8.7 6.9 7.3 9.1 12	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 16 22 20 17	.66 .44 .44 .44 .22 .47 .77 .44 .2 .2 .3 .2 .2 .2 .3 .2 .2 .3 .2 .2 .3 .3 .4 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 22 20 20 18 17 18 18 18	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31 38 34 32 34 33 29 34 31	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35  12 9.7 4.7 3.4 2.1 1.7 2.2 1.8 1.8 1.6 1.3 1.6 1.5 2.0 1.8 2.9	15 14 13 13 12 12 12 12 13 13 11 10 9, 8 9, 8 9, 8 9, 1 8, 3 9, 7 14 13 12 11 10 9, 8	41 38 32 31 33 27 25 35 28 24 20 20 20 22 28 30 41 60 47 37 35 30 33 33 35 35 35 35 35 35 36 37 37 38 38 39 30 30 30 30 30 30 30 30 30 30	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7 .7 .7 1.1 2.4 1.6 1.2 1.0 .8 .8 .8	8. 0 8. 3 8. 0 8. 3 8. 0 8. 3 8. 7 10 9. 8 8. 7 10 9. 8 8. 7 10 9. 8 10 11 12 13	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 16 22 20 17	.66 .44 .4 .4 .2 .2 .4 .77 .4 .2 .2 .2 .3 .2 .2 .2 .3 .2 .4 .7 .7 .4 .2 .3 .4 .7 .7 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 20 18 17 18 18 18 17 16 20 22 25	27 35 37 37 37 37 40 57 37  170 83 95 56 48 40 38 36 31 31 32 34 34 34 34 34 34 34 34 34 34 34 34 34	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35  12 9.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8 1.6 1.5 1.6 1.5 2.0 1.8 2.9 3.6	15 14 13 13 12 12 12 12 13 13 12 10 10 9. 8 9. 8 9. 8 9. 8 9. 8 9. 1 8. 3 9. 7 14 13 12 11 10 9. 8	41 38 32 31 33 27 25 35 28 24 20 20 22 28 28 28 28 29 30 41 60 47 37 35 35 35 35 35 36 37 37 37 37 37 37 37 37 37 37	1.7 1.4 1.1 1.1 1.2 2.9 .8 1.1 1.0 1.0 .8 5.5 6 8.8 .7 .7 .7 .7 1.1 2.4 1.6 1.2 1.0 8 8 8 9	8.0 7.6 8.3 8.0 8.3 8.0 7.3 7.3 8.7 10 10 9.8 8.7 6.9 7.3 9.1 12 18 15	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 22 20 17 9 11 13 15	.66 .44 .4 .4 .4 .2 .2 .4 .7 .7 .4 .2 .2 .2 .3 .2 .2 .2 .3 .2 .4 .7 .7 .4 .4 .5 .4 .4 .4 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 22 20 20 18 17 18 18 18	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31 38 34 32 34 33 29 34 31	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35  12 9.7 4.7 3.4 2.6 2.1 1.7 2.2 1.8 1.6 1.5 1.6 1.5 2.0 1.8 2.9 3.6	15 14 13 13 12 12 12 12 13 13 11 10 9, 8 9, 8 9, 8 9, 1 8, 3 9, 7 14 13 12 11 10 9, 8	41 38 32 31 33 27 25 35 28 24 20 20 22 28 28 28 28 29 30 41 60 47 37 35 35 35 35 35 36 37 37 37 37 37 37 37 37 37 37	1.7 1.4 1.1 1.1 1.2 .9 .8 1.1 1.0 1.0 .8 .5 .6 .8 .8 .7 .7 .7 .7 1.1 2.4 1.6 1.2 1.0 .8 .8 .8	8. 0 8. 3 8. 0 8. 3 8. 0 8. 3 8. 7 10 9. 8 8. 7 10 9. 8 8. 7 10 9. 8 10 11 12 13	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 16 22 20 17	.66 .44 .4 .4 .2 .2 .4 .77 .4 .2 .2 .2 .3 .2 .2 .2 .3 .2 .4 .7 .7 .4 .2 .3 .4 .7 .7 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4
2	20 22 34 26 23 22 28 57 75 54 38 31 26 24 22 20 22 20 21 8 17 18 18 18 18 16 20 22 22 23 24 22 24 25 26 26 27 27 27 28 27 28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	27 35 37 37 37 37 40 57 33  170 83 95 56 48 40 38 36 31 38 34 31 32 33 34 31 34 31	1.9 2.2 3.4 2.6 2.5 3.4 2.5 e30 a35  12 9.7 4.7 3.4 2.1 1.7 2.2 1.8 1.8 1.6 1.3 1.6 1.5 2.0 1.8 2.9	15 14 13 13 12 12 12 12 13 13 11 10 9, 8 9, 8 9, 8 9, 1 8, 3 9, 7 14 13 12 11 10 9, 8	41 38 32 31 33 27 25 35 28 24 20 20 20 22 28 30 41 60 47 37 35 30 33 33 35 35 35 35 35 35 36 37 37 38 38 39 30 30 30 30 30 30 30 30 30 30	1.7 1.4 1.1 1.1 1.2 2.9 .8 1.1 1.0 1.0 .8 5.5 6 8.8 .7 .7 .7 .7 1.1 2.4 1.6 1.2 1.0 8 8 8 9	8.0 7.6 8.3 8.0 8.3 8.0 7.3 7.3 8.7 10 10 9.8 8.7 6.9 7.3 9.1 12 18 15	33 30 28 20 18 17 16 18 13 10 16 27 27 17 11 12 12 11 13 14 12 22 20 17 9 11 13 15	.66 .44 .4 .4 .4 .2 .2 .4 .7 .7 .4 .2 .2 .2 .3 .2 .2 .2 .3 .2 .4 .7 .7 .4 .4 .5 .4 .4 .4 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5

e Estimated. a Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom windrawal tube: D. decantainor; P. pipeler; S. siewe; N. in native water; W. in distilled water: C. chemically discovered: M. mechanically discovered.

		Methods of analysis		BSWCM
			1.000	
			0; 200	100
			0.350	
		limeters	0.250	§ &
		ize, in mil	0,125	88
rsed)		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350 0.500 1.000	97
ally disper	ediment	ner than in	0.031	<b>2</b> .29
mechanica	Suspended sediment	Percent fir	0.016	84 75
rsed; M,	Su	1	0.008	70 61
ally cusper			0.004	53
, chemic			0.002	48
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	858 1,450
, IB G		Concentration	of sample (ppm)	307 613
	Water	ten-	ature (°F)	
		Dis- charge	(cts)	635
		Time	•	2:30 p.m. 4:50 a.m.
	i	Date of collection		Feb. 21, 1955 Mar. 22

### NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO

LOCATION.--At gaging station at bridge on James Barber Road, 1.0 mile upstream from confluence with South Fork, and 1.0 mile northeast of Cedarville, Greene County. DRAINAGE AREA.--25.6 square miles. RECORDS AVAILABLE.--Water temperatures: July 1954 to September 1955. Sediment records: July 1954 to September 1955. EXTREMES, 1954-55.--Water temperatures: Maximum, 87°F July 22, 27, Aug. 6, 1955; minimum, freezing point on several days during December to February. Sediment concentrations: Maximum daily, 688 ppm Mar. 4; minimum daily, no flow on many days during July to September 1954, and August to September 1955. Sediment loads: Maximum daily, 653 tons Mar. 5; minimum daily, 0 tons on many days during July to September 1954, and August to September 1955. REMARKS.--Flow affected by ice Jan. 21 to Feb. 6, Feb. 11-13, Mar. 27. Records of discharge for period July 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, July to September 1954 /Once-daily measurement at varying hours/

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	81		64	11	73	70		21	77	69	67
2	74	72		12		66		22	71	74	68
3	79	72		13	82	72		23		77	56
4	78	72		14	78	69		24	69	73	65
5	79	72		15	75	78		25	79	83	74
6	72	70		16	84	77		26	73		77
7	72	72		17	76			27	74	72	78
8	69	71		18	76	78		28	75	89	79
9	67	72		19	77	80		29		73	70
10	73	72		20	82	72	67	30		72	72
	]			Ĭ			1	31		71	
Ave	rage		·	<b>'</b>					76	71	

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at varying hours/

					-dany me	aburemen	t at vary	ing moure/				
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.
1	71	39	40	42	34		57	75	73	80	85	
2	72	38	38		40		61	76	76	80	86	
3 4	74	38	34	46				78	74	78	86	
4	72	39	36	48		53	46	71	76	83	}	
5	73	45	32	52	33	46	63	72	74		85	70
6	58	46	36	43	33	42			76	82	87	
7	59	47	32	44			47		68		80	
8	49		32		38	45	55	68		72	79	
9	58	50	34	41	43		52		66	76	80	
10	65	42	34	40	44		52	70	66	65	78	
11	66	50	33	42		59	58	69	64	81	81	67
12	66		34	38	32	56	60	69	63	78	75	
13	68		34	33		50	64	70	61		72	71
14	70	52	38		35		61	69	62	78	75	72
15	56	48	34			58	57	66	66	77		71
16	49	50	36	36	38	48	69	77	68		83	72
17	49	52	35				70	76			78	
18	49	54	35	35			68	74		77	81	
19	52	58	33			52	76	75	82	77	83	
20	54	50		33		52	68		78	76	83	
21	50	44		32		52	68	73	71	84		
22			32		36			73	72	87		
23		44	1	32	39		1	78		82	74	70
24	60	40	33	32	45		64	75	78	78	83	
25	60	37	35	32	40	]	58	76	68	84	83	64
26	58	39	38	32	46			80	62	85	85	64
27		36	47	32	47		64	78	78	87	83	66
28	36	ļ	50 .	32		40	70		81	82		69
29	48	38	40	32			70		82	84	79	66
30	41	35	39	32			73	61	82	84		70
31			44	32		54				85		
Aver-		1 .		1			[	1				
age	59	44	36				62		72	80		

### LITTLE MIAMI RIVER BASIN

### LITTLE MIAMI RIVER BASIN -- Continued

### NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO -- Continued

Suspended sediment, July to September 1954

		July			August		<u> </u>	September	
			d sediment			d sediment			d sediment
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day
1	1.9	33	0, 2	0		0	0.1	3	(t)
2	1.6	38	.2	0		0	0		0
3	1.8	37	.2	.1	7	(t)	0		0
4	2.7	29	.2	0		0	0		0
5,	2.7	24	. 2	1.2	18	.1	0		0
6	1.6	13	.1	1.3	17	.1	0		0
7	1.8	13	.1	. 4	8	(t)	0		0
8	1.8	25	.1	0		0	0		0
9	1.4	9	n i	0		0	0		0
10	1.1	3		.2	7		0		0
11	1.0	3		.1	6	h I	0		0
12	. 9	2		. 1	5	ll i	0		0
13	.8	2 2 2	ll i	.2	4	1	0		0
14	.6	2	]] ]	.1	4	1) 1	0	] '	0
15	. 4	2		. 3	7	11 1	0		0
16	.3	i		.3	5	1	0		0
17	. 3	2 5	[]	. 2	5		0		0
18	. 2		k (n)	. 2	7		0		0
19	.7	9	lf "' i	.2	3	11 1	0		0
20	. 5	14		. 2	2	IL ". I	1.4	37	.1
21	1.2	12	]]	. 2	3	(t)	1.3	11	
22	1.1	10	li I	. 2	2		.6	7	1
23	. 3	10	11 1	.2	3		.4	4	
24	. 3	11	11 1	.2	3 6	11 1	.3	3	1
25	. 1	14		.3	7		. 3	3	
26	. 1	14		.3	6	[[ [	.2	5	(t)
27	. 1	7		.4	32	[]	.2	7	
28	. 2	6	ו ע	.6	5	<u> </u>	. 2	ġ	1
29	0		0	.3	3		. 2	12	1
30	0		0	. 2	6	11	. 2	13	J
31	0		0	. 2	5	μ			
Total.	27.5		1.5	8.2		0.3	5.4		0.2

Total discharge for July to September	1954 (cfs-days)	41.1
	(tons)	

### NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO. -- Continued

Suspended sediment, water year October 1954 to September 1955

		October		<b></b>	November			December	
l	Mean		d sediment	Mean		d sediment	Mean		sediment
Day	dis-	Mean concen-	Tons	dis-	Mean	Tons	dis-	Mean	Tons
]	charge	tration	per	charge	concen- tration	per	charge	concen- tration	per
1	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	0.3	3	<u> </u>	2.4	7	(t)	2.7	22	0.2
2	.4	3	II.	2.6	, ;	(t)	2.6	22	. 2
3	.5	7	(t)	2.2	7	(t)	2.4	20	a.1
4 )	. 9	13	If ''	2.5	6	(t)	2.4	20	. 1
5	1.5	5	II	2.5	9	0.1	2.3	15	. 1
6			ν	1	i			1 1	•
7	5. 7 5. 8	107 33	s 2. 1	2.4	13	.1	1.8 1.9	34 30	.2 a.2
8	3.2	12	.5	2.2 2.1	13 13	.1	2.0	18	.1
9 }	2. 2	1 7	(t)	2.0	11	.1	2.5	21	.1
10	1.8	10	) (i)	1.9	12	.1	2.0	20	. ī
		1		1	i _			1 1	
11 12	1.8	8	(t)	1.8	7	n l	2.0	14	.1
13	3.3 3.3	9 5	1 .1	1.8	5 7		2.2 2.4	10 11	.1
14	2.9	6	(t) (t)	1.8	9		2.9	10	.1
15	3.8	8	.1	1.7	9	[]	3.5	17	.1
- 1		1	i	R	Ť	11		1 1	,-
16	4.3	18	.2	1.7	6		3.5	5	(t)
17	4.3	18	. 2	1.7	6		3.5	7 (	a.1
18	3.6	17	.2	1.6	4	1)	4.1	24	.3
19	3.2	18	.2	1.7	2	) (t)	4.3	54	.6
	2. 8	16	.1	1.7	2	'	3.2	49	.4
21	2, 5	17	.1	1.6	2		3.2	46	.4
22	2. 2	17	a.1	1.5	2		2.9	50	.4
23 ]	2.0	16	.1	1.5	1	]	3.3	42	.4
24	1.8	14	. 1	2.0	1	ll i	3.4	27	. 2
25	1.8	12	.1	2.1	1	!}	2.9	31	. 2
26	2. 2	8	(4)	١	1	11 1	2.8	23	. 2
27	2.5	1 7	(t) (t)	1.9 2.2	2	1	2.9	24	.2
28	2. 2	l a	(t)	3.0	10	ا ۱. ا	18	90	s 6, 8
29	2, 5	8	.1	3.2	19	.2	43	110	13
30	2.4	9	.1	2.8	16	.1	50	90	s 13
31 [	2. 2	8	(t)				29	42	3.3
Total.	E0.0								
	79.9		5.0	61.8		1.5	215.6		41.4
	19,9		5.0	61.8		1.5	215.6		41.4
		January			February			March	
1 2	22 24	January 28 30	1.7	61.8 5 6		0.4	215. 6 109 82		e 40 14
1	22	January 28	1.7	5	February 27	0.4	109	March	e 40
1 2 3 4	22 24 20 26	January 28 30 37 46	1.7 1.9 2.0 3.2	5 6	February 27 41 63 37	0.4	109 82 58 120	March 62 55 688	e 40 14 a 9 s 460
1 2 3	22 24 20	January 28 30 37	1.7 1.9 2.0	5 6 5	February 27 41 63	0.4 .7 .8	109 82 58	March  62 55	e 40 14 a 9
1	22 24 20 26 38	January  28 30 37 46 48	1.7 1.9 2.0 3.2 4.9	5 6 5 5 6	February 27 41 63 37 25	0.4 .7 .8 .5	109 82 58 120 323	March 	e 40 14 a 9 s 460 s 653
1	22 24 20 26 38 63	January  28 30 37 46 48 119	1.7 1.9 2.0 3.2 4.9	5 6 5 5 6	February 27 41 63 37 25	0.4 .7 .8 .5 .4	109 82 58 120 323	March 62 55 688 680	e 40 14 a 9 s 460 s 653
1 2 3 4 5 6	22 24 20 26 38	January  28 30 37 46 48	1.7 1.9 2.0 3.2 4.9 s 21 s 7.2	5 6 5 5 6 5 6	February  27 41 63 37 25  132 250	0.4 .7 .8 .5 .4	109 82 58 120 323	March	e 40 14 a 9 s 460 s 653 s 37 a 12
1	22 24 20 26 38 63 50 33 26	January  28 30 37 46 48  119 51 28 47	1.7 1.9 2.0 3.2 4.9	5 6 5 5 6	February 27 41 63 37 25	0.4 .7 .8 .5 .4	109 82 58 120 323 135 82	March 62 55 688 680	e 40 14 a 9 s 460 s 653 s 37 a 12 8.4 a 8
1	22 24 20 26 38 63 50 33	January  28 30 37 46 48  119 51 28	1.7 1.9 2.0 3.2 4.9 s21 s7.2 2.5	5 6 5 5 6 50 128 67	February  27 41 63 37 25  132 250 92	0.4 .7 .8 .5 .4 s34 sa 90 s18	109 82 58 120 323 135 82 62	March	e 40 14 a 9 s 460 s 653 s 37 a 12 8.4
1	22 24 20 26 38 63 50 33 26 20	January  28 30 37 46 48  119 51 28 47 44	1.7 1.9 2.0 3.2 4.9 s 21 s 7.2 2.5 3.3 2.4	5 6 5 5 6 50 128 67 87 128	February  27 41 63 37 25 132 250 92 179 149	0.4 .7 .8 .5 .4 s34 sa 90 s 18 s 80 s 61	109 82 58 120 323 135 82 62 56	March	e 40 14 a 9 s 460 s 653 s 37 a 12 8.4 a 8
1	22 24 20 26 38 63 50 33 26 20	January  28 30 37 46 48  119 51 28 47 44	1.7 1.9 2.0 3.2 4.9 s 21 s 7.2 2.5 3.3 2.4	5 6 5 5 6 50 128 67 87 128	February  27 41 63 37 25 132 250 92 179 149 60	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61	109 82 58 120 323 135 82 62 56 51	March 62 55 688 680 95 50 50 40	e 40 14 a 9 s 460 s 653 s 37 a 12 8. 4 a 8 a 6
1 2 3 4 5 6 7 8 9 10	22 24 20 26 38 63 50 33 26 20	January  28 30 37 46 48 119 51 28 47 44 44 53	1.7 1.9 2.0 3.2 4.9 s21 s7.2 2.5 3.3 2.4	5 6 5 5 6 50 128 67 87 128	February  27 41 63 37 25 132 250 92 179 149 60 56	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61	109 82 58 120 323 135 82 62 56 51	March 62 55 688 680 95 50 50 40 75 69	e 40 14 a 9 s 460 s 653 s 37 a 12 8.4 a 8 a 6
1	22 24 20 26 38 63 50 33 26 20	January  28 30 37 46 48 119 51 28 47 44 44 53 62	1.7 1.9 2.0 3.2 4.9 821 87.2 2.5 3.3 2.4 1.9 2.1	5 6 5 5 6 50 128 67 87 128 80 40 35	February  27 41 63 37 25 132 250 92 179 149 60 56 45	0.4 .7 .8 .5 .4 sa 90 s 18 s 18 s 80 s 61 a 13 6.0 a 4	109 82 58 120 323 135 82 62 56 51 55 50	March 62 55 688 680 95 50 50 40 75 69 45	e 40 14 a 9 s 460 s 653 s 37 a 12 8.4 a 8 a 6
1	22 24 20 26 38 63 50 33 26 20	January  28 30 37 46 48 119 51 28 47 44 44 53	1.7 1.9 2.0 3.2 4.9 s21 s7.2 2.5 3.3 2.4	5 6 5 5 6 50 128 67 87 128	February  27 41 63 37 25 132 250 92 179 149 60 56	0.4 .7 .8 .5 .4 sa90 s18 s80 s61 a13 6.0 a4	109 82 58 120 323 135 82 62 56 51	March 62 55 688 680 95 50 50 40 75 69	e 40 14 a9 s 460 s 653 s 37 a 12 8. 4 a 8 a 6
1	22 24 20 26 38 63 50 33 26 20 16 15 11	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.1	5 6 5 5 6 5 6 50 128 67 87 128 80 40 35 28 23	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20	0.4 .7 .8 .5 .4 sa90 s18 s80 s61 a13 6.0 a4 2.3 a1	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a 8 a 6 l1 9.3 4.9 a 4
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11	January  28 30 37 46 48 119 51 28 47 44 44 44 49 53 62 51 49	1.7 1.9 2.0 3.2 4.9 821 87.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4	5 6 5 5 6 50 128 67 87 128 80 40 35 28 23	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20 67	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61 a13 6.0 a4 2.3 a1	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a 6 11 9.3 4.9 a4 3.2
1	22 24 20 26 38 63 50 33 26 20 16 15 11 11	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 55	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4	5 6 5 5 6 5 5 6 6 5 0 128 6 7 87 128 80 40 35 5 28 23 5 0 79	February 27 41 63 37 25 132 250 92 179 60 56 45 30 20 67 122	0.4 .7 .8 .5 .4 sa 90 s 18 s 80 s 61 a 13 6.0 a 4 2.3 a 11 s 13	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32	March	e 40 14 a9 s 460 s 653 s 37 a 12 8. 4 a 8 a 6 l1 9. 3 4. 9 a 4 3. 2 2. 2. 0
1	22 24 24 20 26 38 63 50 33 26 20 16 15 14 11 11	January  28 30 37 46 48 119 51 28 47 44 44 44 45 52 51 49 52 50 41	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.4	5 6 5 5 6 50 128 67 87 128 80 40 35 28 23 50 79	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 67 122 60	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9	109 82 58 120 323 135 82 62 56 51 55 50 40 32 29 24	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a 8 11 9.3 4.9 a4 3.2 3.2 2.0 a2
1	22 24 20 26 38 63 50 33 32 26 20 16 15 14 11 11 9, 8 9, 2 8, 2 8, 2	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 55	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.3 1.5 1.4 a1	5 6 5 5 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20 67 122 60 25	0.4 .7 .8 .5 .4 sa90 s18 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a 8 a 6 11 9.3 4.9 a 4 3.2 2.0 a 2 2.1
1	22 24 20 26 38 63 50 33 32 26 20 16 15 14 11 11 11 9, 8 9, 2 8, 2 8, 6, 9	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49 52 50 41 40 37	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.4	5 6 5 5 6 50 128 67 87 128 80 40 35 28 23 50 79	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 67 122 60	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9	109 82 58 120 323 135 82 62 56 51 55 50 40 32 29 24	March	e 40 14 14 19 16 16 17 18 18 18 19 19 19 19 19 19 19 19 19 19
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9. 8 9. 2 8. 2 6. 9	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 50 41 40 37 35	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 1.5 1.4 1.4 1.4 1.7	5 6 5 5 6 5 5 6 6 5 0 128 67 87 128 80 40 35 5 28 23 50 79 57 41 42 129	February  27 41 63 37 25 132 250 92 179 60 56 45 30 20 67 122 60 25 18	0.4 .7 .8 .5 .4 sa 90 s 18 s 80 s 61 a 13 6.0 a 4 2.3 a 1 s 13 26 a 9 2.5 a 2	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24 21 21	March	e 40 14 a9 s 460 s 653 s 37 a 12 a, 8, 4 a 8 a 6  11 9, 3 4, 9 a4 3, 2 2, 0 a 2 1, 4 9 sb 90
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9. 8 9. 2 6. 8 6. 9	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49 52 50 41 40 37 35	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.4 1.4 a.7 .7	5 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41 42 129 208	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20 67 122 60 25 18	0.4 .7 .8 .5 .4 s34 sa90 s18 s80 s61 a13 a.0 a.4 2.3 a.1 s13 26 a.9 2.5 a.2	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 21 21 21	March	e 40 14 19 19 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19
1	22 24 20 26 38 63 50 33 32 26 20 16 15 14 11 11 9. 8 9. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49 52 50 41 40 37 35 30 23	1.7 1.9 2.0 3.2 4.9 2.1 5.7.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 a.7 .7	5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41 42 129 208 117	February  27 41 63 37 25 132 250 92 179 49 60 56 45 30 20 67 122 60 25 18 159 294 70	0.4 .7 .8 .5 .4 sa 90 s 18 s 80 s 61 a 13 6.0 a 4 2.3 a 1 s 13 26 a 9 2.5 a 2	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24 21 21 187 379 144	March 62 55 688 680 95 50 50 40 75 69 45 40 37 41 31 25 24 16	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a6 11 9.3 4.9 a4 3.2 2.0 a2 1.4 .9 sb 90 s 311 e 30
1	22 24 26 38 63 50 33 26 20 16 15 14 11 11 9.8 9.2 6.8 6.9	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 19	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.4 1.4 a.1 .9 a.7	5 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 5 28 23 50 79 57 41 42 129 208 117 82	February  27 41 63 37 25 132 250 92 179 149 60 66 45 30 67 122 60 25 18 159 294 70 43	0.4 .7 .8 .5 .4 s34 sa90 s61 a13 6.0 a4 2.3 a1 s13 26 a9 2.5 a2 55 s178 s24	109 82 58 120 323 135 82 62 56 51 55 50 40 32 29 24 24 21 21 187 379 144 92	March	e 40 14 14 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19
1	22 24 20 26 38 63 50 33 32 26 20 16 15 14 11 11 9. 8 9. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8. 2 8	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49 52 50 41 40 37 35 30 23	1.7 1.9 2.0 3.2 4.9 2.1 5.7.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 a.7 .7	5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41 42 129 208 117	February  27 41 63 37 25 132 250 92 179 49 60 56 45 30 20 67 122 60 25 18 159 294 70	0.4 .7 .8 .5 .4 sa 90 s 18 s 80 s 61 a 13 6.0 a 4 2.3 a 1 s 13 26 a 9 2.5 a 2	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24 21 21 187 379 144	March 62 55 688 680 95 50 50 40 75 69 45 40 37 41 31 25 24 16	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a6 11 9.3 4.9 a4 3.2 2.0 a2 1.4 9 sb 90 s 311 e 30
1	22 24 20 26 26 38 63 50 33 26 20 16 11 11 11 9. 8 9. 2 6. 8 6. 8 6. 5 5	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 31 19	1.7 1.9 2.0 3.2 4.9 821 87.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 1.4 a.1 .7 .7	5 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 23 50 79 57 41 42 129 208 117 82 61	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 67 122 60 25 18 159 294 70 43 40	0.4 .7 .8 .5 .4 sa4 sa90 s61 a13 6.0 a4 2.3 a1 s13 28 a9 2.5 a2 55 s178 s24 9.5	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 21 21 167 379 144 92 68	75 69 45 40 37 41 31 25 24 16 190 292	e 40 14 19 14 19 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
1	22 24 26 38 63 50 33 26 20 16 15 14 11 11 9.8 9.2 6.8 6.9	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 19 18	1.7 1.9 2.0 3.2 4.9 8.7.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 1.4 a.7 .7	5 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41 42 129 208 117 82 61 52	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 67 122 80 67 122 80 159 294 70 43 40 35	0.4 .7 .8 .5 .4 s34 sa90 s61 a13 6.0 a4 2.3 a2 s13 26 a9 2.5 s24 9.5 s178 s24,9	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 21 21 167 379 144 92 68	March 62 55 688 680 95 50 50 40 75 69 45 40 37 41 31 25 24 16	e40 14 19 14 19 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9.8 9.2 8.2 6.9 6 6 5 5	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 31 19	1.7 1.9 2.0 3.2 4.9 821 87.2 2.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 1.4 a.7 .7	5 6 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 5 28 23 5 79 5 7 41 42 129 208 117 82 61 52 116	February  27 41 63 37 25 132 250 92 179 60 56 45 30 20 67 122 60 25 18 159 294 43 40 35 136	0.4 .7 .8 .5 .4 s34 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9 2.5 a2 55 s178 s24	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24 21 21 167 379 144 92 68	March	e 40 14 19 14 19 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9. 8 9. 2 8. 2 8. 2 6. 9 6 5 5	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 19 18 17 18 18 18	1.7 1.9 2.0 3.2 4.9 8.7.5 3.3 2.4 1.9 2.1 2.3 1.5 1.4 1.4 a.7 .7	5 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 28 23 50 79 57 41 42 129 208 117 82 61 52	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 67 122 80 67 122 80 159 294 70 43 40 35	0.4 .7 .8 .5 .4 s34 sa90 s61 a13 6.0 a4 2.3 a2 s13 26 a9 2.5 s24 9.5 s178 s24,9	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 21 21 167 379 144 92 68	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a6 11 9.3 4.9 a4 3.2 2.0 a2 1.4 9 sb 90 s 311 e 30 e 7 e 6 e 4 e 4
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9.8 9.2 6.8 6.9 6 6	January  28 30 37 46 48 119 51 28 47 44 44 53 62 51 49 52 50 41 40 37 35 30 23 19 18 17 18 23 33	1.7 1.9 2.0 3.2 4.9 521 57.2 2.5 3.3 2.4 1.9 2.1 2.3 1.4 1.4 a.1 .9 a.7 .7 .6 a.5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5 6 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 5 28 23 5 79 5 7 41 42 129 208 117 82 61 52 116	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20 67 122 60 25 18 159 294 70 34 40 35 136 80	0.4 .7 .8 .5 .4 s34 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9 2.5 a2 55 s178 s24	109 82 58 120 323 135 82 62 56 51 55 40 34 32 29 24 21 21 21 187 379 144 92 68 54 45 40 45 39	March	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a6 11 9.3 4.9 a4 3.2 2.0 a2 1.4 .9 sb 90 s 311 e 30 e 7 e 6 e 4 e 4 3.4 a3
1	22 24 20 26 38 63 50 33 26 20 16 15 14 11 11 9. 8 9. 2 8. 2 8. 2 6. 9 6 5 5	January  28 30 37 46 48 119 51 28 47 44 53 62 51 49 52 50 41 40 37 35 30 23 19 18 17 18 18 18	1.7 1.9 2.0 3.2 4.9 521 527.2 2.5 3.3 2.4 1.9 2.3 1.5 1.4 a.7 .7 .6 a.7 .7 .6 a.5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5 6 6 5 5 6 6 5 5 6 6 5 5 6 6 7 8 7 128 80 40 35 5 28 23 5 79 5 7 41 42 129 208 117 82 61 52 116	February  27 41 63 37 25 132 250 92 179 149 60 56 45 30 20 67 122 60 25 18 159 294 43 40 35 136 80	0.4 .7 .8 .5 .4 s34 s80 s61 a13 6.0 a4 2.3 a1 s13 26 a9 2.5 a2 55 s178 s24	109 82 58 120 323 135 82 62 56 51 55 50 40 34 32 29 24 24 21 21 167 379 144 92 68	March  62 55 688 680 95 50 50 40 75 69 45 40 37 41 31 25 24 16 190 292 32	e 40 14 a9 s 460 s 653 s 37 a 12 8.4 a8 a6 11 9.3 a4 9.3 a2 2.0 a2 1.4 9 sb 90 s 311 e 30 e 7 e 6 e 4 e 4 3.4

e Estimated. s Computed by subdividing day. t Less than 0.05 ton.

a Computed from estimated concentratior graph.
b Computed from partly estimated concertration graph.

### LITTLE MIAMI RIVER BASIN

### LITTLE MIAMI RIVER BASIN -- Continued

### NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April			May			June	
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons
	charge (cfs)	tration	per	charge (cfs)	tration	per	charge (cfs)	tration	per
	(CIS)	(ppm)	day	(CIS)	(ppm)	day	(CIS)	(ppm)	day
1	29	12	0.9	7.9	7	0.1	5.6	18	0.3
2 3	26	7	.5	7.9	18	.4	5.2	18 32	. 2 . 4
4	23 20	7	a.4 .4	7.6 7.4	19 17	.3	4.9 4.8	38	.5
5	19	5	.2	7.3	15	.3	4.6	38	. 5
6	21	4	a.2	7.0	15	a.3	5.0	25	.3
7	19	5	.2	7.0	14	a.3	6.1	8	.1
8	17	5	. 2	7.2	13	. 2	7.0	7	a. 1
9 10	16	4	.2	6.7	13	a.2	6.3	14 19	. 2 . 3
10	15	4	. 2	6.8	12	.2	6.3	19	
11	16	5	.2	6.8	13	. 2	8.2	20	.4
12 13	16 16	10 17	.4 .7	6.4	11 12	. 2	9.6 7.9	30 24	. 8 . 5
14	15	17	.7	6.8 7.4	17	.3	7.2	18	.3
15	14	23	.9	6.3	18	.3	6.6	30	. 5
16	10	17	ا م	١			E 0	26	.4
17	12 12	14	.6 .4	6. 1 5. 9	15 8	.2	5, 9 5, <b>4</b>	20	a.3
18	11	13	.4	5.4	6	.1	5.0	17	a.2
19	12	20	.6	5.4	12	. 2	4.8	13	. 2
20	11	22	.6	5.6	15	a.2	4.6	18	. 2
21	11	14	.4	5. 2	18	. 2	5, 0	20	.3
22	10	12	a.3	5.3	20	.3	4.5	13	. 2
23 24	10 12	11 15	a.3	6.7	15 24	. 3	5.9	9 10	a.1 .3
25	12	9	.5	6.1 5.7	20	.4	11 11	12	.4
i									
26 27	10 9.6	9 13	a.2 .3	5.4 5.0	17 21	.2	14 9.9	12 8	.4
28	9. 2	16	.4	5.3	20	a.3	7.4	9	.2
29	8.7	15	.4	9.2	16	. 4	6.4	12	. 2
30	8.4	11	.2	7.2	19 20	.4	5.9	12	. 2
31 Total	440.9		12. 2	6. 1 202. 1	20	a.3 8.1	202.0		9. 2
				202.1		0.1	202.0		
		July			August			September	
L	5.3	18	0.2	3.6	40	0.4	0	September	0
1	5. 3 5. 2		0, 2	3.6 3.0	40 19	0. <b>4</b> . 2		September	
1	5.3 5.2 7.0 11	18 27 40 55	0. 2 . 4 b. 8 b 2	3.6 3.0 2.6 2.1	40 19 12 12	0. 4 . 2 . 1 a. 1	0 0 0 0	September	0 0 0 0
1 2 3	5.3 5.2 7.0	18 27 40	0. 2 . 4 b. 8	3.6 3.0 2.6	40 19 12	0. 4 . 2 . 1	0 0	September	0 0 0
1	5.3 5.2 7.0 11	18 27 40 55 25	0.2 .4 b.8 b2 .4	3.6 3.0 2.6 2.1	40 19 12 12 12	0. 4 . 2 . 1 a. 1	0 0 0 0	September	0 0 0 0
1 2 3 4 5 6	5.3 5.2 7.0 11 5.3 4.3 4.6	18 27 40 55 25 23 27	0. 2 . 4 b. 8 b 2 . 4	3. 6 3. 0 2. 6 2. 1 1. 7	40 19 12 12 12 12	0.4 .2 .1 a.1 .1	0 0 0 0 .1	September	0 0 0 0 (t)
1 2 3 4 5 6 7 8	5.3 5.2 7.0 11 5.3 4.3 4.6 48	18 27 40 55 25 23 27 220	0.2 .4 b.8 b2 .4 .3 .3	3. 6 3. 0 2. 6 2. 1 1. 7	40 19 12 12 12 12 12	0. 4 . 2 . 1 a. 1	0 0 0 0 .1	September	0 0 0 (t)
1 2 3 4 5 6	5.3 5.2 7.0 11 5.3 4.3 4.6	18 27 40 55 25 23 27	0. 2 . 4 b. 8 b 2 . 4	3. 6 3. 0 2. 6 2. 1 1. 7	40 19 12 12 12 12	0.4 .2 .1 a.1 .1	0 0 0 0 .1	September	0 0 0 0 (t)
1	5.3 5.2 7.0 11 5.3 4.6 4.8 26	18 27 40 55 25 23 27 220 47 150	0. 2 . 4 b. 8 b 2 . 4 . 3 . 3 sb 30 s 3. 6 sb 30	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9	40 19 12 12 12 12 12 12 12 12 11	0.4 .2 .1 a.1 .1	0 0 0 0 .1	September	0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72	18 27 40 55 25 23 27 220 47 150	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30	3. 6 3. 0 2. 6 2. 1 1. 7 1. 4 1. 4 1. 2 . 7	40 19 12 12 12 12 12 12 12 12 12 12 12	0. 4 .2 .1 a.1 .1	0 0 0 0 0 .1	September	0 0 0 0 (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72	18 27 40 55 25 23 27 220 47 150 84	0. 2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7	40 19 12 12 12 12 12 12 12 11 12	0.4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
12345667	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7	18 27 40 55 25 23 27 220 47 150 84 45 35	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9 .7	40 19 12 12 12 12 12 12 12 11 12 12 12 15 17	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 .3	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72	18 27 40 55 25 23 27 220 47 150 84 45 35	0.2 .4 b.8 b2 .4 .3 .3 sb30 s 3.6 sb30	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7	10 19 12 12 12 12 12 12 12 11 12 12 12 12 15	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 1.1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
12345667	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4	18 27 40 55 25 23 27 220 47 150 84 45 35 33 42	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7 2.6 1.6 .6	12 12 12 12 12 12 12 12 12 11 12 12 11 12 13 14 15 17	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 .3 .2	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72 34 22 14 9.7 7.4	18 27 40 55 25 22 27 220 47 150 84 45 33 33 42	0. 2 .4 b.8 b2 .4 3.3 sb30 s3.6 sb30 7.7 2.7 a1 .9 .8 a.9	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7 2.6 1.6 .4 .3	19 12 12 12 12 12 12 12 12 12 12 12 12 12	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 2.3 2.1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72 34 22 14 9.7 7.4	18 27 40 55 25 23 27 220 47 150 84 45 35 35 42 50 55 60	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9 .8	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.9 .7 2.6 1.6 .4 .3	10 19 12 12 12 12 12 12 11 12 12 11 12 15 17 13	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 1.4 1.6 .3 .2	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 5.4 4.6	18 27 40 55 25 23 27 220 47 150 84 45 35 33 42 50 60 60 60 60 60 60 60 60 60 60 60 60 60	0. 2 . 4 b. 8 b2 . 4 . 3 . 3 sb 30 s 3. 6 sb 30 7. 7 2. 7 a 1 . 9 . 8 a. 9 a. 8	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 9 .7 2.6 1.6 4.3 3	40 19 12 12 12 12 12 12 11 12 11 12 15 17 13	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 5.4 4.6 4.6	18 277 40 55 25 23 27 220 47 150 84 45 35 33 42 50 55 60 47 47	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .8 a.9 a.8 .7 6	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .7 2.6 1.6 .4 .3 .3 .3	10 19 12 12 12 12 12 12 11 12 12 11 12 15 17 13	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 1 1.4 1.6 .3 .2 .1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 4.6 4.6 4.6 3.9	18 27 40 55 25 23 27 227 220 47 150 84 45 35 33 42 55 60 47	0. 2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9 .8 a.9 a.8 .7 .6 .5	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7 2.6 1.6 .4 .3 .3 .3	40 19 12 12 12 12 12 12 12 11 12 12 15 17 13 15 17 13	0. 4 .2 .1 a.1 .1	0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 2 3 .1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 5.4 4.6 3.9	18 277 40 55 25 23 27 220 47 150 84 45 35 35 34 42 47 47 47 47	0.2 .4 b.8 b.2 .4 .3 .3 sb30 8530 7.7 2.7 2.7 a.8 a.9 a.8 .7 .6 .5	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .7 2.6 1.6 .4 .3 .3 .3 .3 .2 .2 .2	40 19 12 12 12 12 12 12 11 12 12 12 13 15 17 13	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 1.4 1.6 .3 .2 .1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 4.6 3.9 9.3 4.6	18 27 40 55 25 23 27 227 220 47 150 84 45 35 33 42 55 60 47	0. 2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9 .8 a.9 a.8 .7 .6 .5	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9 .7 2.6 1.6 .4 .3 .3 .3 .3 .2 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 12 15 17 13 15 17 13	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 2 3 .1	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 9.7 7.4 6.6 4.6 4.6 4.6 3.9	18 27 40 55 25 23 27 220 47 150 84 45 35 33 42 55 60 47 47 46 388 23	0. 2	3.6 3.0 2.6 2.1 1.7 1.4 1.2 .9 .7 2.6 1.6 .4 .3 .3 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 15 17 13 15 19 12 17 18	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 1 1.4 1.6 3 .2 .1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 4.6 3.9 3.4 4.6 4.6 3.1 3.4 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4.6 4	18 27 40 55 55 25 23 27 220 47 150 84 5 35 35 35 560 47 47 47 15 60 60 60 60 60 60 60 60 60 60 60 60 60	0.2 .4 .8 b2 .4 .3 .3 sb30 8b30 7.7 2.7 a1 .9 a.8 .7 .6 .5 .4 .4 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9 .7 2.6 1.6 .6 .4 .3 .3 .3 .3 .2 .2 .2 .2	40 19 12 12 12 12 12 11 12 12 11 12 12 15 17 13	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 1 1.4 1.6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	5.3 5.2 7.0 11 5.3 4.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 4.6 4.6 4.6 4.6 3.9 3.4 3.0 2.8 2.8 2.8 2.6	18 277 400 555 25 23 277 2220 477 150 84 45 35 35 360 477 477 47 46 38 23 15 16 28 8 31	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9 a.8 .7 .6 .5 .4 .3 .3	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9 .7 2.6 1.6 .4 .3 .3 .3 .3 .2 .2 .2 .2	40 19 12 12 12 12 12 11 12 12 11 12 15 17 13	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 1 1 4 1 6 6 3 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 6.8 3.9 3.4 4.8 3.9 3.4 4.6	18 27 40 55 55 60 47 47 46 38 23 15 16 28 31 60 60 60 60 60 60 60 60 60 60 60 60 60	0.2 .4 b.8 b.2 .4 .3 .3 sb30 7.7 2.7 2.7 2.7 a.8 .7 6 .5 .4 .3 .8 .7 .8 .8 .7 .8 .1 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	3.6 3.0 2.6 2.1 1.7 1.4 1.2 9 .7 2.6 1.6 .4 3 .3 .3 .2 .2 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 12 15 17 13 15 9 12 17 18 14 12 11 10 10 10 11 11 11 11 11 11 11 11 11	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 3 .2 .1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 4.6 4.6 4.6 4.6 3.9 3.4 3.0 2.8 2.8 2.8 2.4 1.9 6.3	18 27 40 55 25 23 27 220 47 150 84 45 55 33 42 55 60 47 47 46 38 28 31 60 65	0.2 b.8 b2 .4 .3 .3 sb30 7.7 2.7 a1 .9 a.8 a.9 a.8 .7 .6 .5 .4 .3 .2 .1 .1	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .7 2.6 1.6 .4 .3 .3 .2 .2 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 15 17 13 15 9 12 17 18 14 12 11 10 10 11 10 11 11 11 11 12 12 12 12 12 12 12 12 12	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 22 14 9.7 7.4 6.6 6.6 6.8 3.9 3.4 4.8 3.9 3.4 4.6	18 27 40 55 55 60 47 47 46 38 23 15 16 28 31 60 60 60 60 60 60 60 60 60 60 60 60 60	0.2 .4 b.8 b.2 .4 .3 .3 sb30 7.7 2.7 2.7 2.7 a.8 .7 6 .5 .4 .3 .8 .7 .8 .8 .7 .8 .1 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	3.6 3.0 2.6 2.1 1.7 1.4 1.2 9 .7 2.6 1.6 .4 3 .3 .3 .2 .2 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 12 15 17 13 15 9 12 17 18 14 12 11 10 10 10 11 11 11 11 11 11 11 11 11	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 1.4 1.6 3 .2 .1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 14 9.7 7.4 6.6 4.6 3.9 3.4 4.6 4.6 3.9 2.8 2.8 2.8 2.8 2.8	18 27 40 55 55 23 27 220 47 150 84 45 35 35 35 35 56 60 47 47 47 46 88 23 15 16 28 31 60 65 38 38	0.2 .4 .8 b2 .4 .3 .3 sb30 7.77 2.7 a1 .9 a.8 .7 .6 .5 .4 .3 .3 sb30	3.6 3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .9 .7 2.6 1.6 .4 .3 .3 .3 .2 .2 .2 .2 .2 .2	40 19 12 12 12 12 12 12 12 11 12 15 17 13 15 9 12 17 18 14 12 11 10 10 11 10 11 11 11 11 12 12 12 12 12 12 12 12 12	0.4 .2 .1 a.1 .1 .1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
1	5.3 5.2 7.0 11 5.3 4.6 48 26 72 34 226 72 34 22, 4.6 4.6 4.6 4.6 4.6 3.9 3.4 3.0 2.8 2.6 2.8 2.8 2.6 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1	18 27 40 55 25 23 27 220 47 150 84 45 5 35 33 42 50 67 47 47 466 38 31 60 65 38 42	0.2 .4 b.8 b2 .4 .3 .3 sb30 s3.6 sb30 7.7 2.7 a1 .9 a.8 .76 .6 .5 .4 .3 .2 .1 .1 .2 .2 .5 .5 .6 .6 .6 .6 .6 .6 .6 .6 .6 .6	3.6 3.0 2.6 2.1 1.7 1.4 1.2 9 .7 2.6 1.6 .4 .3 .3 .2 .2 .2 .2 .2 .2 .2 .2	40 19 12 12 12 12 12 12 11 11 12 15 17 13 15 9 12 17 18 14 12 11 10 13 11 10 11 11 11 11 11 12 12 12 12 12 12 12 12	0.4 2.2 .1 a.1 .1 } (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t)  (t)  (t)  (t)  (t)  (t)  (t)  (t)
1	5. 3 5. 2 7. 0 11 5. 3 4. 6 48 26 72 14 9. 7 7. 4 6. 6 5. 4 4. 6 3. 9 3. 4 4. 6 4. 6 3. 9 3. 4 4. 6 4. 6 5. 4 4. 6 4. 6 5. 4 4. 6 4. 6 4. 6 5. 4 6. 6 6. 6 6. 6 7. 6 7. 6 7. 6 7. 6 7. 6	18 27 240 55 25 23 27 220 47 150 84 45 35 35 35 35 16 28 23 15 16 28 36 56 58 38 42 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.2 .4 b.8 b2 .4 .3 .3 sb30 7.7 2.7 a1 .9 a.8 .7 .6 .5 .4 .3 .3 sb30	3.6 3.0 2.6 2.1 1.7 1.4 1.4 1.2 .7 2.6 1.6 .4 .3 .3 .2 .2 .2 .2 .2 .2 .1	40 19 12 12 12 12 12 11 12 12 11 12 12 15 17 13 15 9 12 17 18 14 12 11 10 13 11 10 11 11 11 11 11 11 11 11 11 11 11	0.4 2.2 .1 a.1 .1 } (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)

s Computed by subdividing day. t Less than 0,05 ton.

a Computed from estimated concentration graph.
b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO--Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analyses I, Bottom withdrawal tube; D, decantation; P, pipette; S, sieve; N, in native water; C, remincally dispersed; M, mechanically dispersed)

		Methods of analysis		BSWCM	BSWCM	BSWCM
			1.000			
			0.500			
			0.350			_
		limeters	0.250	100	_	_
		ze, in mil	0.125	66	100	100
360)	Suspended sediment	Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350 0.500 1.000	86	66	66
uy arsper		er than in	0.031	94	86	96
mechanica		ercent fin	0.016	91	92	88
sed; M,	Sur	ď	0.008	- 48	88	81
any casper			0.004	83	E	26
, cnemica			0.002	:	62	99
w, in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	555	3,060	847
w, ma		Concentration	of sample (ppm)	736	1,990	360
	Water	tem- per-	ature (°F)		_	
		Discharge (cfs)			257	358
	Desc	Time		10:10 p. m.	8:30 p. m.	3:10 a.m.
		Date of collection		Feb. 9, 1955 10;10 p.m.	Mar. 4	Mar. 22

### SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO

LOCATION. -- At gaging station at bridge on Weimer Road, 2.4 miles upstream from confluence with North Fork, and 2.3 miles east of Cedarville, Greene County.

DRAINAGE AREA. -- 20.2 square miles.

DRAINAGE AREA. --20.2 square miles.
RECORDS AVAILABLE. --Water temperatures: July 1954 to September 1955.
Sediment records: July 1954 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 80°F Aug. 7; minimum, freezing point on many days during December to February.

Sediment concentrations: Maximum daily, 559 ppm Mar. 22, 1955; minimum daily, 1 ppm Dec. 16, May 9, 16, 18, 19.

Sediment loads: Maximum daily, 598 tons Mar. 22; minimum daily, less than 0.05 ton on concentrations.

Sediment loads: Maximum daily, 590 tons mar. 22, minimum daily, 66°F July 1, 1954; many days.

EXTREMES, July 1954 to September 1955. --Water temperatures: Maximum, 86°F July 1, 1954; minimum, freezing point on several days during December 1954 to February 1955. Sediment concentrations: Maximum daily, 559 ppm Mar. 22, 1955; minimum daily, no flow on many days during August and September 1954. Sediment loads: Maximum daily, 598 tons Mar. 22, 1955; minimum daily, 0 tons on many days during August and September 1954.

REMARKS.-- Flow affected by ice Jan. 16 to Feb. 6; Feb. 11-14, Mar. 26-27. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, July to September 1954 Once-daily measurement at approximately 7 a.m.

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept
1	86	70	78	9	62	72		17	65			25	69		
2	83	72	75	10	64			18	75			26	62		
3	74	80		11	69			19	70		74	27	67	€9	
4	71	70		12	70			20	70		72	28	70	72	
5	74	70		13	73			21	73		59	29	73	72	
6	65	65		14	69			22	82			30	72	70	
7	70	65		15	69	73		23	64			31	72	60	
8	64	70		16	63			24	65			l .	1	l	
Av	erage					• • • • • • •	•••••					••••	70		

Temperature (°F) of water, water year October 1954 to September 1955

				Once	-daily me	asuremer	it at varyi	ng hours	<i>'</i>			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	45	42	39	35	44	45	52	58	72	76	59
2	69	39	38	43	32	50	49	58	61	72	76	58
3	71	41		43	33	50	42	60	61	77	76	61
4		43	40	48	34	48	42	62	62	74	77	67
5	69		36	49	33	46	47	63	68	75	77	67
6	60	43	35	45	36	43	55	57	70	76	77	65
7	48	45		42	35	41	48	59	66	76	80	63
8	48	45	34	42	35	46	41	59	62	72	68	54
9	56	46	34	42	42	52	45		62	75	68	61
10	62	45	32	42	42	54	50	56	62	79	74	67
11	65	45	33	40	32	59	54	59	68	71	71	67
12	65	41	34	39	32	42	54	58	62	70	70	55
13	66	40	34	37	32	50	57	60	59	70	68	54
14	69	40	37	37	35	52	57	58	56	75	65	62
15	58	40	34	37	35	60	57	58	59	75	61	66
16	52	43	36	34	37	51	50	60	63	74	71	65
17	49	45		37	42	47	69	58	66	76	71	65
18	49	51	35	36	42	50	52	54	66	75	73	68
19	48	47	34	32	45	51	60		72	74	70	64
20	47	50	35	36	44	45	57	63	72	74	75	61
21	49	44	35	36	45	52	70	62	69	71	77	59
22	49	44	35	35	41	50	55	68	67	71	74	66
23	50	41	36	32	47	51	56	66	74	76	70	67
24	53	41	36	36	46	45	59	68	66	74	65	65
25	51	39	35		49	40	56	66	70	70	63	59
26	60	42	35	37	40	36	52	63	64	72	65	55
27	61	40	39		49	39	49	67	66	76	67	59
28	50	38	43		52	36		68	65	78	75	62
29	53	37				40	53	65	68	72	70	58
30	45	39	40	32		40	57	60	72	76	72	64
31	43		40	32		45		56		79	67	
ver- age	56	43	36	39	39	47	53	61	65	74	71	62

### SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO--Continued

Suspended sediment, water year July to September 1954

		July			August			September		
		Suspende	sediment			d sediment		Suspende	d sediment	
Day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	Mean dis- charge (cfs)	Mean concen- tration (ppm)	Tons per day	
1 2 3 4 5	1, 1 . 8 . 9 . 9	80 110 166 176 175	0.2 .2 .4 .4 .4	0. 1 . 1 . 2 . 1 . 2	82 74 47 70 77	(t)	0.1 .1 0 0 0	14 14  	(t) (t) 0 0	
6 7 8 9	.9 1.1 .8 .9	198 168 142 143 203	. 5 . 5 . 3 . 3	.6 .5 .2 .2	51 45 43 52	0, 1 - , 1 (t) (t) 0	0 0 0 0		0 0 0 0	
11 12 13 14	.6 .4 .4 .4	177 198 143 155 155	.3 .2 .2 .2 .2	0 0 0 0 .3	   58	0 0 0 0 (t)	0 0 0 0		0 0 0 0	
16 17 18 19	.3 .3 .7 .5	115 110 115 133 122	.1 .1 .1 .2 .2	0 0 0 0	   	0 0 0 0	0 0 0 .6 .4	  66 32	0 0 0 .1 (t)	
21 22 23 24 25	.9 .9 .5 .3	153 112 89 75 56	.4 .3 .1 .1 (t)	0 0 0 0	   	0 0 0 0	. 2 . 1 0 0	20 29  	(t) (t) 0 0	
26 27 28 29 30	.1 .1 .2 .1	68 107 112 121 112 98	(t) (t) (t) .1 (t)	0 1.1 .3 .3 .2 .2	103 40 32 37 32	0 .3 (t) (t) (t) (t)	0 0 0 0	   	0 0 0 0	
Total .	16.8		6.5	4.6		0.8	1.5		0.2	

Total discharge for period (cfs-days). 22.9
Total load for period (tons) 7.5
t Less than 0.05 ton.

### LITTLE MIAMI RIVER BASIN

### LITTLE MIAMI RIVER BASIN--Continued

### SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			ended sealn	ent, water y		1954 to Sept	ember 1955		
		October		ļ	November			December	
	Mean		d sediment	Mean		ed sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	0.1	57	<del></del>	0.8	8	h	0.0		ή
2	.1	32	ll	.8	5		0.8 .8	12 10	l)
3	. 2	26	(t)	.8	5	ll l	.8	9	ll .
4	. 3	35	11	.8	5	<u> </u>	. 8	10	II
5	. 3	47	y	]] .8	7		. 8	15	]]
a	. 5	117							1
6 7	1.1	60	0.2 .2	.8 .8	18 20	) (t)	.9	11	1
8	1.2	32	.1	.8	22	<b>{{</b>	.8	16	<b>}</b> }
9	. 9	14	· -	.8	13		.8	10	II
10	. 8	11		. 8	10		.9	15	(t)
.,	.7	11	[	_		[ ]	l _		li
12	. 9	12	1	.7 .7	17 27	0.1	.8 .8	6 3	]}
13	1.2	14	}	.6	16	h ". 1	.8	3	<b>{</b> }
14	1.2	15	(t)	. 6	12	{{	. 9	3	
15	1.2	7	``	. 6	14		1.0	3	
		_		1			i	i	()
16 17	1.2 1.2	7		.6	13		1.1	1 1	il
18	1.2	4		.6 .6	17 15	]	1.1	5	ľ
19	1, 2	8		.6	14	1	1.2 1.5	22 32	0.1
20	1.1	28	.1	.6	g		1.7	24	:i
. 1		-	ł	1			Ì	i	İ
21	1.0 ,9	27 14	.1	.6	12	} (t)	1.6	27	.1
23	.9	20	J.	.6	5		1.6	35	.2
24	.9	20	<b>!</b>	.6 .7	5 6		1.8 1.8	30 21	.1
25	. 8	16	li i	.7	5		1.8	27	.1
	•			1		1		ł	· -
26	. 8 . 8	15 14	} (t)	.7	6		1.6	24	.1
27	.8	5	[]	.7	2 2	li	1.4	30 39	.1
29	.8	ğ	[]	.8	11	ו ע	2.4 10	39	.2 1.0
30	.8	6		.8	15				
30	. 8	6 5	)				21 16	43 15	2.4
30			1.4	.8		0.7	21	43	2.4
30	. 8	5	1.4	.8	15	0.7	21 16	43 15	2.4
30 31 Total,	. 8 25, 9	5  January		21.2	15  February	0, 2	21 16 80.1	43 15  March	2. 4 . 6 . 5. 6
30 31 Total.	. 8 25. 9	5  January 13 13	0.4	21. 2 3 4	15  February 25 26	0. 2 . 3	21 16 80.1 86 54	43 15  March 110 36	2. 4 .6 .5.6 .5.6 
30 31 Total.	. 8 25, 9	January 13 13 30	0.4 .4 1.0	21. 2 3 4 3	15  February 25 26 14	0. 2 . 3 . 1	21 16 80.1 86 54 40	43 15  March 110 36 20	2. 4 .6 .5. 6 
30 31 Total.	. 8 25. 9 13 12 12 12	5  January 13 13 30 30	0.4 .4 1.0 1.0	21. 2 3 4 3 3	15  February 25 26 14 8	0. 2 . 3 . 1 . 1	21 16 80.1 86 54 40 84	43 15  March 110 36 20 300	2. 4 .6 .5. 6 .5. 6 .5. 2 .2. 2 sa 170
30 31 Total.	. 8 25, 9	January 13 13 30	0.4 .4 1.0	21. 2 3 4 3	15  February 25 26 14	0. 2 . 3 . 1	21 16 80.1 86 54 40	43 15  March 110 36 20	2. 4 .6 .5. 6 
30 31 1 2 3 4	. 8 25. 9 13 12 12 12	5  January 13 13 30 30 30	0.4 .4 1.0 1.0 .5	3 4 3 4 3	15  February 25 26 14 8 10	0. 2 . 3 . 1 . 1	21 16 80.1 86 54 40 84 223	43 15  March 110 36 20 300 430	2. 4 .6 5. 6 sa 30 5. 2 2. 2 sa 170 sa 330
30	. 8 25, 9 13 12 12 12 20 32 31	January 13 13 30 30 10 48 16	0.4 .4 1.0 1.0 .5 s4.6	21. 2 21. 2 3 4 3 3 4 40 124	15  February 25 26 14 8 10	0. 2 . 3 . 1 . 1 . 1	21 16 80.1 86 54 40 84 223 90 53	43 15  March 110 36 20 300 430 106 37	2. 4 .6 .5. 6 .5. 2 .2. 2 sa 170 sa 330 .26 .5. 3
30	.8 25.9 13 12 12 12 20 32 31 22	5  January 13 13 30 30 10 48 16 13	0.4 .4 1.0 1.0 .5 84.6 1.3	21. 2 21. 2 3 4 3 3 4 40 124 54	15  February 25 26 14 8 10 38 37 37	0. 2 .3 .1 .1 .1 .1 s7. 4 12 s5. 8	21 16 80.1 86 54 40 84 223 90 53 38	March 110 36 20 300 430 106 37 36	2. 4 .6 .5. 6 .5. 6 .5. 2 .2. 2 sa 170 sa 330 .26 .5. 3 .3. 7
30	. 8 25. 9 13 12 12 12 20 32 31 22 18	5  January 13 13 30 30 10 48 16 13 10	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8	21. 2 21. 2 3 4 3 3 4 40 124 54	15  February 25 26 14 8 10 38 37 37 92	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32	21 16 80.1 86 54 40 84 223 90 53 38 33	43 15  March 110 36 20 300 430 106 37 36 26	2. 4 .6 .5.6 .5.6 .5.2 .2.2 .5.2 .2.2 .5.3 .3.7 .2.3
30	.8 25.9 13 12 12 12 20 32 31 22 18 14	5  January 13 13 30 30 10 48 16 13 10 11	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69	15  February 25 26 14 8 10 38 37 37	0. 2 .3 .1 .1 .1 .1 s7. 4 12 s5. 8	21 16 80.1 86 54 40 84 223 90 53 38	43 15  March 110 36 20 300 430 106 37 36 26 37	2. 4 .6 .5.6 .5.2 .2.2 sa 170 sa 330 .26 .5.3 .3.7 .2.3 .2.7
3031	.8 25.9 13 12 12 12 20 32 31 22 18 14	5 January 13 13 30 30 10 48 16 13 10 11	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5	3 4 3 3 4 40 124 54 59 69	15   25 26 14 8 10 38 37 37 92 33	0. 2 .3 .1 .1 .1 .1 s7. 4 12 s5. 8 s32 s7. 0	21 16 80.1 86 54 40 84 223 90 53 38 33 27	43 15  March 110 36 20 300 430 106 37 36 26 37	2. 4 .6 .5.6 .5.6 .5.2 .2.2 sa 170 sa 330 .2.6 .5.3 .3.7 .2.3 .2.7
3031	.8 25.9 13 12 12 12 20 32 31 22 18 14	5  January 13 13 30 30 10 48 16 13 10 11	0.4 .4 1.0 1.0 .5 84.6 1.3 .8 .5 .4	21. 2 21. 2 3 4 3 3 4 4 40 124 54 59 69 50 30	15 	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26	43 15  March 110 36 20 300 430 106 37 36 26 37 59 22	2. 4 6 5. 6 Sa 30 5. 2 2. 2 Sa 170 Sa 330 26 5. 3 3. 7 2. 3 2. 7 4. 6 1. 5
3031	. 8 25. 9 13 12 12 12 12 20 32 31 22 18 14 12 10 9. 5	5  January 13 13 30 30 10 48 16 13 10 11 5 2 25	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5 .4	3 4 3 3 4 4 40 124 54 59 69 50 30 25	15 	0. 2 .3 .1 .1 .1 .1 s7. 4 12 s5. 8 s32 s7. 0 2. 3 1. 0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20	43 15  March 110 36 20 300 430 106 37 36 26 37 59 22 21	2. 4 .6 .5. 6 .5. 2 .2. 2 sa 170 sa 330 .2. 6 .5. 3 .3. 7 .2. 3 .2. 7 .4. 6 .1. 5 .1. 1
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2	5 January 13 13 30 30 10 48 16 13 10 11 5 2 25 7	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5 .4	21.2 21.2 3 4 4 3 3 4 4 40 124 54 59 69 50 30 25 50 30	15   February 25 26 14 8 10 38 37 37 92 33 17 12 5 5	0. 2 . 3 . 1 . 1 . 1 . 1 . 1 . 1 . 57. 4 . 12 . 85. 8 . 832 . 87. 0 . 2. 3 . 1. 0 . 3	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18	43 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12	2. 4 .6 5. 6 Sa 30 5. 2 2. 2 Sa 170 Sa 330 26 5. 3 3. 7 2. 3 2. 7 4. 6 1. 5 1. 1
3031	. 8 25. 9 13 12 12 12 12 20 32 31 22 18 14 12 10 9. 5	5  January 13 13 30 30 10 48 16 13 10 11 5 2 25	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5 .4	3 4 3 3 4 4 40 124 54 59 69 50 30 25	15 	0. 2 .3 .1 .1 .1 .1 s7. 4 12 s5. 8 s32 s7. 0 2. 3 1. 0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20	43 15  March 110 36 20 300 430 106 37 36 26 37 59 22 21	2. 4 .6 .5. 6 .5. 2 .2. 2 sa 170 sa 330 .2. 6 .5. 3 .3. 7 .2. 3 .2. 7 .4. 6 .1. 5 .1. 1
30	. 8 25. 9 13 12 12 12 12 20 31 32 31 22 18 14 12 10 9.5 9.5 7.5	5 January 13 13 13 30 10 48 16 13 10 11 5 2 25 7 3 2 2	0.4 .4 1.0 .5 84.6 1.3 .8 .5 .4 .2 .1 .6 .2	3 4 3 3 4 40 124 54 59 69 50 30 25 20 16 27	15 February 25 26 14 8 10 38 37 37 92 33 17 12 5 5 5 22 26	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3	21 16 80.1 88.1 86 54 40 84 223 90 53 38 327 29 26 20 18 18	43 15  March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 11	2. 4 .6 .5. 6 .5. 2 .2. 2 .5. 2 .2. 2 .5. 3 .3. 7 .2. 3 .2. 7 .6 .6 .5
30	.8 25.9 113 112 112 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5	5 January 13 13 13 30 10 48 16 13 10 11 5 2 2 5 7 3 3 2 2 4	0.4 .4 1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 .6 .2 .1	3 4 3 3 4 40 124 54 59 69 50 30 25 20 16	15  February 25 26 14 8 10 38 37 37 92 33 17 12 5 5 5 22	0.2 .3 .1 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 .3 1.0 s2.3	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18	43 45 	2. 4 .6 .5.6 .5.2 .2.2 sa 170 sa 330 .26 .5.3 .3.7 .2.3 .2.7 .4.6 .1.5 .1.1 .6
30	. 8 25. 9 13 12 12 12 12 20 31 12 22 18 14 12 10 9. 5 9. 2 7. 5	5 January 13 30 10 48 16 13 10 11 5 2 25 7 3 3	0.4 -4 -1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 .6 .2 .1 .1 (t)	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 25 20 16 27 42 33	15 February 25 26 14 8 10 38 37 37 92 33 17 12 5 5 22 26 20 12	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 .1.0	21 16 80.1 86 54 40 84 223 90 53 33 27 29 26 20 18 18 16 13 13	43 15 	2. 4 6 5. 6
30	.8 25.9 13 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5	5 January 13 13 13 30 10 48 16 13 10 11 5 2 25 7 3 3 2 4 4 2 2 2	0.4 .1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 (t)	3 4 3 3 4 40 124 54 59 69 50 30 25 20 16 27 42 33 26	15 	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 s2.3 s2.5 1.1	21 16 80.1 86 54 40 84 223 90 53 33 327 29 26 20 18 18 16 13 13 13	43 15 	2. 4 .6 5. 6 5. 2 2. 2 sa 170 sa 330 26 5. 3 3. 7 2. 3 2. 7 4. 6 1. 5 1. 1 .6 .6 .5 .2 .2 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.6 6 5 5	5 January 13 13 13 30 10 10 48 16 13 10 11 5 2 25 7 3 3 2 4 4 2 2 2 3 3	0.4 .4 1.0 1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 .1 (t) .1 (t) (t) (t)	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 25 20 16 27 42 33	15 February 25 26 14 8 10 38 37 37 92 33 17 12 5 5 22 26 20 12	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 .1.0	21 16 80.1 86 54 40 84 223 90 53 33 27 29 26 20 18 18 16 13 13	43 45 15 	2. 4 6 5. 6
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5 7 6 6 5 5 4	5 January 13 13 13 30 10 48 16 13 10 11 5 2 5 7 3 3 2 2 4 4 2 2 3 3 2 2	0.4 .4 1.0 1.0 5.5 84.6 1.3 .8 5.5 .4 .2 .1 .6 .2 .1 (t) .1 (t) (t)	.8 	15 February 25 26 14 8 10 38 37 92 33 17 12 5 5 22 26 20 11 13	0.2 .3 .1 .1 s7.4 12 s5.8 s32 s7.0 .3 1.0 s2.3 s2.5 1.1 .8	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12	43 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 12 12 11 7 6 10 13 350	2. 4 6 5.6  Sa 30 5.2 2.2  Sa 170 Sa 330  26 5.3 3.7 2.3 2.7  4.6 1.5 1.1 6.6 6.6  .5 2.2 2.3 3.6 4.6 4.5 2.2 3.3 4.6 6.5 3.5 3.7 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.1
30	.8 25.9 13 12 12 12 20 32 31 22 14 12 10 9.5 9.5 9.2 7.5 5	5 January 13 13 13 30 10 48 16 13 10 11 5 2 25 7 3 2 4 4 2 2 3 3 2 7	0.4 -4 -1.0 1.0 -5 -5 -8 -4 -2 -1 -1 (t) -1 (t) -1 (t) -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 20 16 27 42 33 26 28 106 183	15 February 25 26 14 8 10 38 37 37 37 12 5 5 5 22 26 20 11 13 100 190	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 16 13 12 12 161 315	43 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 12 11 7 6 10 13 350 559	2. 4 6 5.6    sa 30
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5 76 6 5 5 4 4 4	5 January 13 13 13 30 10 48 16 13 10 11 5 2 25 7 3 3 2 2 4 4 2 2 2 3 3 2 7 7 10	0.4 .1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 .1 (t) (t) (t) (t)	3 4 3 3 4 4 40 124 54 59 69 50 30 25 20 16 27 42 33 26 28 106 183 85	15 February 25 26 14 8 10 38 37 92 33 17 12 5 5 22 26 26 20 12 11 13 100 190 444	0.2 .3 .1 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 .3 .1.0 s2.5 1.1 .8 1.0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97	43 15 March 110 36 20 300 430  106 37 36 26 37 59 22 21 12 11 7 6 10 13 350 559 95	2. 4 6 5. 6 22 2 sa 170 26 6 6 . 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
30	. 8 25. 9 13 12 12 12 20 32 31 22 18 14 12 10 9. 5 9. 2 7. 5 7 6 5 5 4 4 4 4 4 4 3	5 January 13 30 10 48 16 13 10 11 5 2 2 7 3 2 4 4 2 2 3 3 2 7 10 9	0.4	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 25 20 16 27 42 33 26 28 108 1183 85 56	15 February 25 26 14 8 10 38 37 37 37 12 5 5 22 26 20 11 11 13 100 190 44 25	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0 s3.8	21 16 80.1 86 54 40 84 223 90 53 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97 60	43 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 12 11 7 6 10 13 350 559 95 54	2. 4 6 5.6  Sa 30 5.2 2.2  Sa 170 Sa 330 26 5.3 3.7 2.3 2.7  4. 6 1.5 1.1 6.6 .5 2.2 3.3 2.7 4.6 1.5 1.1 6.6 5.5 2.2 3.3 2.7 6.6 5.8 5598 25.8 8.7
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5 76 6 5 5 4 4 4	5 January 13 30 10 48 16 13 10 11 5 2 2 7 3 2 4 4 2 2 3 3 2 7 10 9 8	0.4 .1.0 1.0 .5 s4.6 1.3 .8 .5 .4 .2 .1 .1 (t) (t) (t) (t)	3 4 3 3 4 40 124 54 59 69 50 30 25 20 16 27 42 33 26 28 108 183 85	15 February 25 26 14 8 10 38 37 92 33 17 12 5 5 22 26 26 20 12 11 13 100 190 444	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0 s3.1 1.0 s2.3 s2.5	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97	43 15 March 110 36 20 300 430  106 37 36 26 37 59 22 21 12 11 7 6 10 13 350 559 95	2. 4 6 5. 6 22 2 sa 170 26 6 6 . 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5 7 6 5 5 4 4 4 4 4 3 3 3 3 3 4 4 5 5 5 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	5 January 13 13 13 30 10 10 48 16 13 10 11 5 2 25 7 3 3 2 4 4 2 2 2 3 3 2 7 10 9 8 8 7	0.4	3 4 3 3 4 4 40 124 54 59 69 50 30 25 20 16 27 42 33 26 28 106 183 85 56 41 36	15 February 25 26 14 8 10 38 37 37 37 92 33 17 12 5 5 22 26 20 12 11 13 100 190 44 25 18 20	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0	21 16 80.1 86 54 40 84 223 90 53 38 27 29 26 20 18 16 13 12 12 12 161 315 97 60 44 35	43 45 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 11 7 6 10 13 35 55 95 54 36 50	2. 4 6 5. 6 5. 2 2. 2 sa 170 sa 330 26 5. 3 3. 7 2. 3 2. 7 4. 6 1. 5 1. 1 6. 6 6 5. 2 2. 3 4 4 sa 210 s 598 25 8. 7 4. 3 s 5. 4
30	.8 25.9 13 12 12 12 20 32 31 22 18 14 12 10 9.5 9.2 7.5 7 6 6 5 5 4 4 4 4 4 4 4 4 4 4 4 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	5 January 13 13 30 10 48 16 13 10 11 5 2 2 7 3 2 4 4 2 2 3 2 7 10 9 8 7 8	0.4 .4 .1.0 .5 .5 .4.6 .1.3 .8 .5 .4 .2 .1 .6.6 .2 .1 (t) .1 (t) (t) (t) .1 .1 .1 .1 .1 .1 .1 .1	.8 	15 Pebruary 25 26 14 8 10 38 37 37 92 33 17 12 5 5 22 26 20 12 11 13 100 190 44 25 18 20 160	0.2 .3 .1 .1 s7.4 12 s5.8 s32 s7.0 .3 1.0 s2.3 s.2.5 1.1 .8 1.0 s2.3 s2.5 1.1 .8 1.0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97 60 44 35 30	43 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 12 11 7 6 10 13 350 559 95 54 36 50 108	2. 4 6 5. 6 Sa 30 2. 2 sa 170 sa 330 26 5. 3 2. 7 4. 6 1. 5 1. 1 6 6 5. 2 2 3 4 5 5 98 25 8. 7 4. 3 8 5. 4 \$7. 9
30	.8 25.9 13 12 12 12 20 32 31 22 14 12 10 9.5 9.5 9.5 4 4 4 4 4 3 3 3 2 7 6 5 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	5 January 13 13 13 30 10 10 48 16 13 10 11 5 2 25 7 3 3 2 4 4 2 2 2 3 3 2 7 10 9 8 8 7 8 8 10	0.4	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 20 16 27 42 33 26 28 106 183 85 56 41 36 41 37 42 43 44 45 45 46 47 47 48 48 48 48 48 48 48 48 48 48	15 February 25 26 14 8 10 38 37 37 37 12 5 5 5 12 26 20 11 13 100 190 44 21 18 20 160 53	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0	21 16 80.1 80.1 86 54 40 84 223 90 53 33 27 29 26 20 18 16 13 12 12 12 161 315 97 60 44 35 30 26	43 45 15 March 110 36 20 300 430 106 37 36 26 37 59 22 21 12 11 7 6 10 13 35 55 95 54 36 36	2. 4 6 5.6
30	.8 25.9 13 12 12 12 20 32 18 14 12 10 9.5 9.2 7.5 76 6 5 5 4 4 4 4 4 4 4 4 4 4 4 4 5 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	5 January 13 13 30 10 48 16 13 10 11 5 2 2 5 7 3 3 2 2 7 10 9 8 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.4 1.0 1.0 1.0 1.5  s4.6 1.3 8.5 1.4 2.2 1.1 (t) (t) (t) (t) (t) (t) 1.1 1.1 1.1 b.1 b.1 1.1	.8 	15  February  25 26 14 8 10 38 37 92 33 17 12 5 5 22 26 12 11 13 100 190 44 25 18 20 160 53	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0 s3.8 s2.5 1.1 .8 1.0	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97 60 44 35 30 29 29 20 20 20 20 20 20 20 20 20 20	43 15 March 110 36 20 300 430  106 37 36 26 37 59 22 21 12 12 11 7 6 10 13 350 559 95 54 36 50 108 20 18	2. 4 6 5.6  Sa 30 5.2 2.2 Sa 170 Sa 330  26 5.3 3.7 2.3 2.7 4.6 1.5 1.1 6.6 6.6  .5 2.2 3.3 2.7 4.8 5.9 8.7 4.3 8.7 9.1 1.4 1.4
30	25.9 13 12 12 12 12 20 32 31 22 14 12 10 9.5 9.5 9.7 7 6 5 5 4 4 4 4 4 4 4 4 3 3 2 2 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	5 January 13 13 13 30 10 10 48 16 13 10 11 5 2 25 7 3 3 2 4 4 2 2 2 3 3 2 7 10 9 8 8 7 8 10 11 13	0.4	21. 2 21. 2 3 4 3 3 4 40 124 54 59 69 50 20 16 27 42 33 26 28 106 183 85 56 41 36 41 37 42 43 44 45 45 46 47 47 48 48 48 48 48 48 48 48 48 48	15 February 25 26 14 8 10 38 37 37 37 12 5 5 5 12 26 20 11 13 100 190 44 21 18 20 160 53	0.2 .3 .1 .1 s7.4 12 s5.8 s32 s7.0 .3 1.0 s2.3 s.2.5 1.1 .8 1.0 s2.3 s2.5 1.1 .8 1.0	21 16 80.1 86 54 40 84 223 90 53 33 27 29 26 20 18 18 16 13 12 12 161 315 97 60 44 35 30 26 29 26	43 45 45 47 48 48 48 48 48 48 48 48 48 48 48 48 48	2. 4 6 5.6 Sa 30 2.2 Sa 170 Sa 330 26 5.3 3.7 2.3 2.7 4.6 1.5 1.1 6.6 5.2 2.3 3.4 Sa 210 \$598 25 8.7 4.3 \$5.4 8.7 9 1.4 1.0
30	.8 25.9 13 12 12 12 20 32 18 14 12 10 9.5 9.2 7.5 76 6 5 5 4 4 4 4 4 4 4 4 4 4 4 4 5 2 2 2 2 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	5 January 13 13 30 10 48 16 13 10 11 5 2 2 5 7 3 3 2 2 7 10 9 8 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.4 1.0 1.0 1.0 1.5  s4.6 1.3 8.5 1.4 2.2 1.1 (t) (t) (t) (t) (t) (t) 1.1 1.1 1.1 b.1 b.1 1.1	.8 	15 February 25 26 14 8 10 38 37 37 37 12 5 5 22 26 20 12 11 13 100 190 44 25 18 20 160 53	0.2 .3 .1 .1 .1 s7.4 12 s5.8 s32 s7.0 2.3 1.0 .3 1.0 s2.3 s2.5 1.1 .8 1.0 s3.10 10 3.10 10 3.10 10 10 10 10 10 10 10 10 10 10 10 10 1	21 16 80.1 86 54 40 84 223 90 53 38 33 27 29 26 20 18 18 16 13 13 12 12 161 315 97 60 44 35 30 29 29 20 20 20 20 20 20 20 20 20 20	43 15 March 110 36 20 300 430  106 37 36 26 37 59 22 21 12 12 11 7 6 10 13 350 559 95 54 36 50 108 20 18	2. 4 6 5.6  Sa 30 5.2 2.2 Sa 170 Sa 330  26 5.3 3.7 2.3 2.7 4.6 1.5 1.1 6.6 6.6  .5 2.2 3.3 2.7 4.8 5.9 8.7 4.3 8.7 9.1 1.4 1.4

t Less than 0.05 ton.
Computed from partly estimated concentration graph.
Computed from estimated concentration graph.

### SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955--Continued

Mean			April			May			June	
Description   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color   Color		Mean		d sediment	Mean		d sediment	Mean		d sediment
Charge   tration   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citable   Citab	Day	dis-		Tons	dis-		Tons	dis-		Tons
1.   19				per	charge		per	charge	tration	per
2. 18 8 8 4 4 5.4 7 .1 3.9 5 .1 3. 16 5 5 .2 5.4 10 .1 3.3 10 .1 4. 15 5 .2 5.4 10 .1 3.3 10 .1 4. 15 5 .2 5.4 10 .1 3.3 10 .1 5. 12 6 .2 4.9 6 .1 2.9, 11 .1 6. 13 11 4 4 4.5 7 .1 1 2.5 11 .1 7. 12 8 .2 4.8 0 .1 1 2.5 11 .1 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		(CIS)	(ppm)	day	(CIS)			(cis)		day
3.    16	1									
5.	3		8	.4						
5.	4			2			1 1			i :i
8. 9.7 6 2 2 4.8 8 8 11 2.6 15 11 3.0 8.8 10 1.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 10 2.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 10 2.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 15 11 4.6 2 (t) 4.3 31 4.1 11. 9.0 5 1.1 4.6 2 (t) 4.3 31 4.1 11. 9.0 12 4.8 35 4.4 11. 12. 8.6 5 5 1.1 6.8 5 1.1 7.6 35 1.7 11. 12. 8.6 5 5 1.1 6.8 5 1.1 7.6 35 1.7 11. 12. 8.1 9 2.2 6.4 5 5 1.1 7.6 35 1.7 11. 12. 12. 12. 12. 12. 12. 12. 12. 12.	5			.2		6		2.6		
8. 9.7 6 2 2 4.8 8 8 11 2.6 15 11 3.0 8.8 10 1.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 10 2.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 10 2.2 4.3 11 (t) 3.9 27 3.3 10. 8.8 15 11 4.6 2 (t) 4.3 31 4.1 11. 9.0 5 1.1 4.6 2 (t) 4.3 31 4.1 11. 9.0 12 4.8 35 4.4 11. 12. 8.6 5 5 1.1 6.8 5 1.1 7.6 35 1.7 11. 12. 8.6 5 5 1.1 6.8 5 1.1 7.6 35 1.7 11. 12. 8.1 9 2.2 6.4 5 5 1.1 7.6 35 1.7 11. 12. 12. 12. 12. 12. 12. 12. 12. 12.	g.	13	11	4	4.5	7	,	9.5	,,	١,
9. 8.8 10 2 4.3 1 1 (t) 3.9 27 3 10. 8.8 5 5 1 4.6 2 (t) 4.3 31 4 11. 9.0 5 1 8.1 10 2 4.8 35 4 11. 9.0 5 5 1 8.1 10 2 4.8 35 4 12. 8.8 5 5 1 6.8 5 1.1 7.5 37 7 13. 8.1 9 2 6.0 5 1 5.6 31 5 14. 8.1 9 2 6.0 5 1 5.6 31 5 15. 7.7 9 2 5.9 2 3.7 41 4 16. 6.4 10 2 5.6 1 1 3.0 22 2 2 3.7 41 4 16. 6.4 10 2 5.6 1 1 3.0 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7	12	8		4.3	6	.1	2.5	16	ı i
10	8			. 2	4.8			2.6		.1
11.	.9		10	.2						.3
12.   3.8   5   .1   6.8   5   .1   7.5   31   .7     13.   6.1   9   .2   6.4   5   .1   4.5   31   .5     14.   6.1   9   .2   6.4   5   .1   4.5   31   .5     15.   7.7   9   .2   5.9   2   3.7   41   .4     16.   6.4   10   .2   5.6   1   3.7   2£   .2     17.   6.4   11   .2   5.2   2   2.5   24   .2     18.   6.2   6   .1   4.9   1   (t)   2.2   15   .1     19.   7.0   8   .2   4.6   1   2.0   14   .1     19.   7.0   8   .2   4.6   1   2.0   14   .1     20.   7.1   5   .1   4.5   2   2.0   12   .1     21.   7.1   4   .1   4.2   2   3.6   35   .3     22.   6.8   5   .1   4.5   2   2.0   12   .1     22.   6.8   5   .1   4.5   11   .1   3.5   18   .2     23.   6.8   5   .1   4.6   11   .1   3.5   18   .2     24.   7.9   6   .1   4.3   5   .1   14   46   .1     25.   7.9   5   .1   3.8   5   .1   14   2   2     26.   7.3   5   .1   3.7   7   .1   24   21   1.4     27.   6.6   2   (t)   3.2   5   (t)   15   21   8     28.   6.2   4   .1   3.4   13   .1   9.0   33   8     29.   6.2   6   .1   11   20   6   6   6   6   6   9     28.   6.2   4   .1   3.4   13   .1   9.0   33   8     29.   6.2   6   .1   11   20   6   6   6   6   6   9     30.   5.9   10   2   7.5   4   8   1   1   -	10	0.0			3.0	-	(1)	3.5	"	
13.	11			.1	8. 1					.4
14.   8.1   9   .2   6.4   5   .1   4.5   38   .4	12	8.8	5	.1		5	.1			1.7
15.	14	8.1		.2	6.4	5	:1	4.5	38	.5
17.	15			. 2		2	h I			.4
17.	10	e 4	10			,			20	١ .
18.	17			2	5.0	2				
19	18,	6.2	6	.1			(t)		19	
21	19	7.0		.2	4.6					.1
22 6.8 5 1.1 4.1 10 1.1 3.5 18 2.2 23 6.8 5 5 1.1 4.6 11 1.1 4.2 34 21 1.4 24 7.9 6 1.1 4.3 5 1.1 14 4.2 2. 8 25 7.9 5 1.1 3.8 5 1.1 14 4.2 2. 8 26 7.3 5 1.1 3.7 7 1.1 24 21 1.4 27 6.6 2 (t) 3.2 5 (t) 15 21 8.8 28 6.2 4 1.1 3.4 13 1.1 9.0 33 8.8 29 6.2 6 1.1 11 20 6.6 6.6 19 3.3 30 5.9 10 2.2 7.0 10 2.5 4.4 16 .3 31 5.4 161.7 3.0 170.2 11.6  Total 273.8 5.4 161.7 3.0 170.2 11.6     July	20	7.1	5	.1	4.5	2		2.0	12	.1
22. 6.8 5 1.1 4.1 10 1.1 3.5 18 22 23. 6.8 5 1.1 4.5 11 1.1 4.2 3.4 4.4 24. 7.9 6 1.1 4.3 5 1.1 14 4.6 1.5 25. 7.9 5 1.1 3.8 5 1.1 14 4.2 2.8 26. 7.3 5 1.1 3.7 7 1.1 24 21 1.4 27. 6.6 2 (t) 3.2 5 (t) 15 21 8.8 28. 6.2 4 1.1 3.4 13 1.1 9.0 33 8.8 29. 6.2 6 1.1 11 20 6.6 6.6 19 3 31 5.4 161.7 3.0 170.2 111.6  Total 773.8 5.4 161.7 3.0 170.2 111.6  2. 3.9 45 5 5 2.3 35 2 4 4 1 (t) 4.3 4 1 1 1 1 6.0 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1	21		4	.1			J			
24.	22		5					3.5		
25 7,9 5 1,1 3,8 5 1,1 14 2C 8.8  26 7,3 5 1,1 3,7 7 1,1 24 21 1,4  27 6,6 2 (t) 3,2 5 (t) 15, 21 8.8  28 6,2 4 1,1 3,4 13 1,1 9,0 33 8.8  29 6,2 6 1,1 11 20 6 6 6,6 19 3  30 5,9 10 2, 7,0 10 2, 5,4 16 3  31 5,4 8 1,1  Total. 273.8 5,4 161.7 3.0 170.2 11.6	23	7.9	5 6	1 1						1.5
26 7.3 5 1.1 3.7 7 1.1 24 21 1.4 27 6.6 2 (t) 3.2 5 (t) 15. 21 8 28 6.2 4 1.1 3.4 13 .1 9.0 33 8 29 6.2 6 1.1 11 20 6 6 6.6 19 .3 30 5.9 10 .2 7.0 10 .2 5.4 16 .3 31 5.4 8 1.1  Total 273.8 5.4 161.7 3.0 170.2 11.6     July	25		5	.1		5	.î			.8
22. 6.6 2 4 1.1 3.2 5 (t) 15 21 8 28. 6.2 4 1.1 3.4 13 .1 1 9.0 33 8 29. 6.2 6 1 111 20 6 6 6.6 19 3 30. 5.9 10 .2 7.0 10 .2 5.4 16 3 31 5.4 8 .1 5.4 16 6 .3 31 5.4 8 .1 11.6    July	1					_				
28	26		2	(1)	3.7	7 5			21	
29 6.2 6 .1 11 20 6 6 6.6 19 3 30 5.9 10 .2 7.0 10 .2 5.4 18 .3 31	28	6.2	4	.1	3.4		.1	9.0		
Total. 273.8 5.4 161.7 3.0 170.2 11.6    July	29			.1			.6	6.6		
Total   273.8	30		10		7.0 5.4			5.4	18	.3
July	31			1	J. T				1	
1	Total	273 8		5.4	161 7		3.0	170 9		11.6
2 3.9 45 55 2.3 355 2.4 430 (t) 3 3.9 45 55 1.9 40 2.2 .4 41 (t) 4 4.3 40 .5 1.7 40 .2 .3 81 0.1 5 3.5 30 .3 1.4 50 .2 .3 81 0.1 6 3.2 26 .2 1.2 55 .2 .3 73 .1 7 3.6 35 .3 1.2 46 .1 .2 83 (t) 8 7.0 34 .6 .9 40 .1 .1 84 (t) 9 5.6 41 .6 .9 37 .1 .1 64 (t) 10 23 145 s10 3.0 51 .4 .2 53 (t) 11 16 38 1.6 55 103 s20 1.6 24 .1 12 8.6 40 .9 14 .29 1.1 1.4 34 .1 12 8.6 40 .9 14 .29 1.1 1.4 34 .1 13 5.7 42 .6 6.2 25 .4 .6 .1 .4 .37 15 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 12 35 1	Total.	273.8		5,4	161.7		3.0	170.2		11.6
3 3.9			July			August			Septe mber	
4 4.3	1	4, 5	July 48	0.6	3.0	August 40	0.3	0.5	Septe mber	(t)
6 3.2 266 .2 1.2 555 .2 3 73 73 .1 7 3.6 35 3 1.2 46 .1 .2 83 (t) 8 7.0 34 6 9 40 11 .1 84 (t) 9 5.6 41 6 9 37 11 .1 64 (t) 10 23 145 s10 3.0 51 .4 .2 53 (t)  11 16 38 1.6 55 103 s20 1.6 24 .1 12 8.6 40 .9 14 29 1.1 1.4 34 .1 13 5.7 42 6 6 6.2 25 1.4 6 19 14 4.5 30 4 3.7 14 1.1 .4 34 .1 15 3.5 34 3 2.7 22 2.2 3 552  16 3.3 29 .2 2.1 47 3 3 .3 42 17 2.7 30 .2 1.8 37 .2 2 2 46 18 2.3 31 .2 1.8 37 .2 2 2 46 19 2.3 31 .2 1.3 35 .1 1 60 20 2.0 39 .2 1.5 42 .2 .2 44 19 2.3 31 .2 1.3 35 .1 1 60 21 1.7 15 .1 .9 44 .1 .1 60 22 1.4 11 (t) 1.2 40 .1 .3 46 23 1.3 12 (t) 2.5 26 .2 .5 48 .1 24 1.2 20 .1 1.3 22 .1 8 30 .1 6 .1 4 (t) 269 71 .2 1.0 35 .1 .8 37 .2 .2 .5 48 .1 25 1.2 20 .1 1.3 22 .1 .8 30 .1 .4 .1 .2 .1 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	1 2 3	4.5 3.9 3.9	July 48 45 45	0.6 .5 .5	3. 0 2. 3	August 40 35	0.3 .2 .2	0.5	Septe mber 29 30	(t) (t)
7         3.6         35         ,3         1,2         46         1         2         83         (t)           8         7.0         34         6         9         40         1         .1         84         (t)           9         5.6         41         .6         .9         37         .1         .1         .64         (t)           10         23         145         s10         3.0         51         .4         .2         53         (t)           11         16         38         1.6         55         103         s20         1.6         24         .1           12         8.6         40         .9         14         29         1.1         1.4         34         .1           13         5.7         42         .6         6.2         25         .4         .6         19         .1         .4         .37         .1         .4         .1         .1         .4         .37         .1         .4         .1         .1         .4         .37         .1         .4         .1         .1         .4         .37         .1         .4         .37         .1	1	4, 5 3, 9 3, 9 4, 3	July 48 45 45 40	0.6 .5 .5	3.0 2.3 1.9	August 40 35 40 40	0.3 .2 .2 .2	0.5 .4 .4 .3	Septe mber 29 30 41 81	(t) (t) (t) (t) 0.1
8	1	4, 5 3, 9 3, 9 4, 3	July 48 45 45 40	0.6 .5 .5	3.0 2.3 1.9	August 40 35 40 40	0.3 .2 .2 .2	0.5 .4 .4 .3	Septe mber 29 30 41 81	(t) (t) (t) (t) 0.1
9 5.6 41 6 9 37 1 1 1 64 (t) 10 23 145 s10 3.0 51 .4 .2 53 (t) 11 16 38 1.6 55 103 s20 1.6 24 .1 12 8.6 40 9 14 29 1.1 1.4 34 .1 13 5.7 42 6 6 6.2 25 .4 .6 19 14 4.5 30 .4 3.7 14 1. 4 37 15 3.5 34 .3 2.7 22 .2 .3 52  16 3.3 29 .2 2.1 47 .3 .3 .3 42 17 2.7 30 .2 1.8 37 .2 .2 .2 46 18 2.3 31 .2 1.8 37 .2 .2 .2 46 19 2.3 31 .2 1.3 35 .1 1 60 20 2.0 39 .2 1.2 40 .1 1 66 21 1.7 15 .1 .9 44 11 .1 66 22 1.4 11 (t) 1.2 40 .1 .1 66 22 1.4 11 (t) 2.5 26 .2 .5 48 .1 23 1.3 12 (t) 2.5 26 .2 .5 48 .1 24 1.2 20 .1 1.3 35 .1 .4 .4 .1 .1 .2 .4 .1 .1 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1	4, 5 3, 9 3, 9 4, 3 3, 5	July  48 45 45 40 30 26	0.6 .5 .5 .5 .3	3. 0 2. 3 1. 9 1. 7 1. 4	August 40 35 40 40 50	0.3 .2 .2 .2 .2	0.5 .4 .4 .3 .3	Septe nber  29 30 41 81 63 73	(t) (t) (t) 0.1 .1
11	1	4.5 3.9 3.9 4.3 3.5 3.5	July 48 45 45 40 30 26 35	0.6 .5 .5 .5 .3	3. 0 2. 3 1. 9 1. 7 1. 4	August 40 35 40 40 50 55 46	0.3 .2 .2 .2 .2 .2	0.5 .4 .4 .3 .3	Septe nber  29 30 41 81 63 73 83	(t) (t) (t) 0.1 .1
11	1	4.5 3.9 3.9 4.3 3.5 3.6 7.0	July 48 45 45 40 30 26 35 34	0.6 .5 .5 .5 .3 .2 .3	3.0 2.3 1.9 1.7 1.4 1.2	August  40 35 40 40 50 55 46 40	0.3 .2 .2 .2 .2 .2	0.5 .4 .4 .3 .3 .3	Septe nber  29 30 41 81 63 73 83 84	(t) (t) (t) 0.1 .1
12 8.6 40 9 14 29 1.1 1.4 34 34 1.1 13 5.7 42 6 6 6.2 25 .4 6 6 19 14 4.5 15 3.5 34 3.7 2.7 22 .2 .3 52 16 3.3 29 .2 2.1 47 3.3 3.3 42 17 2.7 30 22 1.8 37 .2 2 .2 46 18 2.3 40 .2 1.5 42 .2 .2 .2 44 19 2.3 31 .2 1.3 35 .1 1.1 60 20 2.0 39 .2 1.2 40 1.1 1.6 66 20 2.0 39 .2 1.2 40 1.1 1.6 66 20 1.7 15 1.1 (t) 1.2 40 1.1 1.6 66 20 1.3 12 (t) 2.5 2.6 2.5 48 1.1 2.4 1.1 1.1 40 22 1.4 11 (t) 1.2 40 1.1 3.3 46 23 1.3 12 (t) 2.5 2.6 2.5 5 48 1.1 24 1.2 2.1 1.3 22 1.1 1.8 30 1.1 2.1 1.3 22 1.1 1.8 30 1.1 2.1 1.3 1.2 1.3 1.3 1.2 (t) 2.5 2.6 2.5 5 48 1.1 2.1 2.1 1.2 2.1 1.3 1.3 1.2 (t) 2.5 2.6 2.2 5 48 1.1 2.1 1.3 1.2 1.3 1.3 1.2 (t) 2.5 2.6 2.2 5 48 1.1 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	1	4.5 3.9 3.9 4.3 3.5 3.2 3.6 7.0 5.6	July 48 45 45 40 30 26 35 34 41	0.6 .5 .5 .5 .3 .2 .3	3.0 2.3 1.9 1.7 1.4 1.2 1.2	August 40 35 40 40 50 55 46 40 37	0.3 .2 .2 .2 .2 .2 .1	0.5 .4 .4 .3 .3 .3	Septe nber  29 30 41 81 63 73 83 84 64	(t) (t) (t) 0.1 .1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1	4.5 3.9 3.9 4.3 3.5 3.2 3.6 7.0 5.6	July  48 45 45 40 30 26 35 34 41 145	0.6 .5 .5 .5 .3 .2 .3 .6 .6	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9	August 40 35 40 40 50 55 46 40 37 51	0.3 .2 .2 .2 .2 .2 .1 .1	0.5 .4 .4 .3 .3 .3 .3 .1 .1	Septe nber  29 30 41 81 63 73 83 84 64 53	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
15 3.5 34 3 2.7 22 2 2 3 3 52  16 3.3 29 2 2 1.8 47 33 .3 42  17 2.7 30 2 1.8 37 2 2 2 46  18 2.3 31 2 1.3 35 1 1 60  20 2.0 39 2 1.1 4 1 1 1 60  21 1.7 15 1 9 44 1 1 1 66  21 1.7 15 1 1 9 44 1 1 1 66  22 1.4 11 (t) 1.2 40 1 1 3 46  23 1.3 12 (t) 2.5 26 2 5 48 1  23 1.3 12 (t) 2.5 26 2 5 48 1  25 1.2 20 1 1.3 22 1 6 14 (t)  26 9 71 2 1 1 3 22 1 6 14 (t)  26 9 71 2 1 1 3 22 1 6 14 (t)  26 9 71 2 1 0 35 1 4 4 27 (t)  27 9 78 2 9 44 1 1 4 34 (t)  28 3.5 80 2 8 9 40 1 4 4 34 (t)  29 17 70 84 8 8 55 1 8 4 34 (t)  20 17 70 84 8 8 55 1 8 4 1 1  20 17 70 84 8 8 55 1 8 4 1 1  20 17 70 84 8 8 55 1 8 4 1 1  21 17 70 84 8 8 55 1 8 41 1  23 4.6 53 6 6 6 35 1  Total discharge for years (cfs-days).	1	4. 5 3. 9 3. 9 4. 3 3. 5 3. 2 3. 6 7. 0 5. 6 23	July  48 45 45 40 30  26 35 34 41 145	0.6 .5 .5 .5 .3 .2 .3 .6 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0	August 40 35 40 40 50 55 46 40 37 51	0.3 .2 .2 .2 .2 .2 .1 .1	0.5 .4 .4 .3 .3 .3 .2 .1 .1 .2	Septe mber  29 30 41 63 73 83 84 64 53	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
16         3.3         29         .2         2.1         47         .3         .3         42           17         2.7         30         .2         1.8         37         .2         .2         46           18         2.3         40         .2         1.5         42         .2         .2         44           18         2.3         31         .2         1.3         35         .1         .1         60           20         2.0         39         .2         1.2         40         .1         .1         66           21         1.7         15         .1         .9         44         .1         .1         40           22         1.4         11         (t)         1.2         40         .1         .3         46           23         1.3         12         (t)         2.5         26         .2         .5         48         .1           24         1.2         8         (t)         1.7         20         .1         .8         30         .1           25         1.2         20         .1         1.3         22         .	1	4. 5 3. 9 3. 9 4. 3 3. 5 3. 6 7. 0 5. 6 23 16 8. 6 5. 7	July  48 45 45 40 30 26 35 34 41 145 38 40 42	0.6 .5 .5 .5 .3 .2 .3 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0	August  40 35 40 40 50  55 46 40 37 51 103 29 25	0.3 .2 .2 .2 .2 .2 .1 .1 .1 .4	0.5 .4 .3 .3 .3 .2 .1 .1 .2	Septe mber  29 30 41 81 63 73 83 84 64 53 24 31 19	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1	4.5 3.9 3.9 4.3 3.5 3.6 7.0 5.6 23	July  48 45 45 40 30  26 35 34 41 145 38 40 42 30	0.6 .5 .5 .3 .2 .3 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 .9 3.0 55 14 6.2 3.7	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14	0.3 .2 .2 .2 .2 .2 .1 .1 .1 .4	0.5 .4 .3 .3 .3 .2 .1 .1 .2 .1	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
18 2.3 40 2 1.5 42 2 2 44	1	4.5 3.9 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34	0.6 .5 .5 .5 .3 .6 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22	0.3 .2 .2 .2 .2 .2 .1 .1 .1 .4 s 20 1.1 .4	0.5 .4 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .4 .3	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
19 2.3 31 2 1.3 35 1 1 60 20 2.0 39 2 1.2 40 1.1 1 60 20 2.0 39 2 1.2 40 1.1 1 66 8 20 2.0 39 2 1.2 40 1.1 1 66 8 20 2.0 1.4 1.1 1 60 86 20 2.0 1.4 1.1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	4.5 3.9 3.9 4.3 3.5 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34	0.6 .5 .5 .5 .3 .2 .3 .6 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22	0.3 .2 .2 .2 .2 .2 .1 .1 .4 s20 1.1	0.5 .4 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.6 .4 .3	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52	(t) (t) (t) 0.1 .1 (t) (t) (t) (t)
20 2.0 39 .2 1.2 40 .1 .1 66  21 1.7 15 .1 .9 44 .1 .1 .1 40  22 1.4 111 (t) 1.2 40 .1 3 46  23 1.3 12 (t) 2.5 26 .2 .5 48 .1  24 1.2 8 (t) 1.7 20 .1 8 30 .1  25 1.2 20 .1 1.3 22 .1 6 14 (t)  269 71 .2 1.0 35 .1 .4 27 (t)  279 78 .2 .9 44 .1 .4 34 (t)  28 3.5 80 a.8 .9 40 .1 6 42 .1  29 17 70 8a 4 8 35 .1 .4 34 (t)  29 17 70 8a 4 8 35 .1 .8 41 .1  30 8.1 32 .7 .7 46 .1 1.7 35 .2  31 4.6 53 .6 .6 .6 35 .1  Total 155.2 25.7 119.5 25.9 14.2 1.7	1	4.5 3.9 4.3 3.5 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.3 2.7	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30	0.6 .5 .5 .5 .5 .3 .2 .3 .6 .6 .6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37	0.3 .2 .2 .2 .2 .2 .1 .1 .4 s20 1.1 .4	0.5 .4 .4 .3 .3 .3 .2 .1 .2 .1 .2 .1 .4 .6 .4 .3 .3	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42	(t) (t) (t) (t) (t) (t) (t) (t) (t)
22 1.4 11 (t) 1.2 40 1 3 46 2 3	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31	0.6 .5 .5 .5 .3 .2 .3 .6 .6 .5 .10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .4 .2	0.5 .4 .4 .3 .3 .3 .2 .1 .1 .2 1.4 .6 .4 .3	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 44	(t) (t) (t) (t) (t) (t) (t) (t) (t)
22 1.4 11 (t) 1.2 40 1 3 46 2 3	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31	0.6 .5 .5 .5 .3 .2 .3 .6 .6 .5 .10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35	0.3 .2 .2 .2 .2 .2 .1 .1 .4 .4 .520 1.1 .2 .3	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .3 .3 .3 .3 .2 .1 .1 .2 1.6 .4 .3 .3 .3 .3 .2 .1 .1 .1 .2	Septe mber  29 30 41 81 63 73 83 84 64 53 24 31 19 37 52 42 46 44 60	(t) (t) (t) (t) (t) (t) (t) (t) (t)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.2 2.7 2.3 2.7 2.3 2.0	July 48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31 39	0.6 .5.5 .5.5 .3 .6.6 s10	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35 40	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .3 .2 .2 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .4 .3 .3 .3 .2 .1 .1 .1 .1	Septe mber  29 30 41 81 63 73 83 84 64 53 24 31 19 37 52 42 46 44 60 66	(t) (t) (t) (t) (t) (t) (t) (t) (t)
25 1.2 20 .1 1.3 22 .1 6 14 (t)  269 71 .2 1.0 35 .1 .4 27 (t)  279 78 .2 .9 44 .1 .4 34 (t)  283.5 80 a.8 .9 40 .1 .6 42 .1  29 17 70 sa4 .8 35 .1 .8 41 .1  30 8.1 32 .7 .7 46 .1 1.7 35 .2  31 4.6 53 .6 .6 .6 35 .1  Total .155.2 25.7 119.5 25.9 14.2 1.7  Total discharge for years (cfs-days). 4,430.4	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.2 2.7 2.3 2.3 2.3 2.1	July  48 45 45 40 30 28 35 34 41 145 38 40 42 30 34 29 30 40 31 39	0.6 .5.5 .5.5 .3 .6.6 s10 1.6.9 .6.4 .4.3 .2.2 .2.2 .2.2	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .3 .2 .2 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .4 .3 .3 .2 .1 .1 .1 .1	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 44 60 66 40 46	(t) (t) (t) (t) (t) (t) (t) (t) (t)
26 9 71 2 1.0 35 .1 .4 27 (t) 27 9 78 .2 .9 44 1. 4 34 (t) 28 3.5 80 a.8 .9 40 .1 6 42 .1 29 17 70 sa 4 8 35 .1 8 41 .1 30 8.1 32 .7 .7 48 .1 1.7 35 .2 31 4.6 53 .6 .6 .6 35 .1	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.3 2.7 2.3 2.0	July  48 45 45 40 30 28 35 34 41 145 38 40 29 30 40 31 39 15 11 12	0.6 .5 .5 .5 .3 .6 .6 .6 .6 .9 .6 .4 .3 .2 .2 .2 .2 .2 .2	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40 44 40 26	0.3 .2 .2 .2 .2 .1 .1 .4 s20 1.1 .4 s20 2.2 .2 .1 .1 .1 .2	0.5 .4 .3 .3 .3 .2 .1 .2 1.6 1.4 .3 .3 .3 .2 .1 .1 .2 1.6 .4 .3 .3 .2 .1 .1 .1 .3 .5	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 46 40 66	(t) (t) (t) (t) (1) (1) (t) (t) (t) (t) (t) (t) (t) .1
27	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.2 2.3 2.3 2.3 2.3 2.1 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31 39 15 11 12 8	0.6 .5.5 .5.5 .3 .6.6 s10 1.6.9 .6.6 .4.3 .2 .2.2 .2.2 .2.2 .2.1 (t)	3. 0 2. 3 1. 9 1. 7 1. 4 1. 2 1. 2 . 9 3. 0 55 14 6. 2 3. 7 2. 7 2. 1 1. 8 1. 5 1. 3 1. 5 1. 3 1. 2	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40 44 40 26 20	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .3 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .3 .3 .2 .1 .1 .1 .6 .3 .3 .2 .1 .1 .8 .8	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 60 66 40 46 48 30	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
28 3.5 80 a.8 9 40 .1 6 42 .1 29 17 70 sa4 8 35 .1 .8 41 .1 30 8.1 32 .7 .7 46 .1 1.7 35 .2 31 4.6 53 .6 .6 .6 35 .1	1	4.5 3.9 4.3 3.5 4.3 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.2 2.3 2.3 2.3 2.1 2.3 2.1 2.3 2.1 2.3 2.1 2.3 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31 39 15 11 12 8 20	0.6 .5.5 .5.5 .3 .6.6 s10 1.6.9 .6.4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .1 (t)	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.5 1.3	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40 44 40 26 20 22	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .4 .2 .3 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .3 .3 .2 .1 .1 .1 .5 .6 .5 .6	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 60 66 40 46 48 30 14	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
29 17 70 sa 4 .8 35 .1 .8 41 .1 30 8.1 32 .7 .7 46 .1 1.7 35 .2 31 4.6 53 .6 .6 35 .1	1	4.5 3.9 4.3 3.5 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.2 2.7 2.3 2.0 1.7 1.4 1.3 1.2	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 31 39 15 11 12 8 20 71	0.6 .5.5 .5.5 .3 .6.6 s10 1.6.9 .9.6 .4.3 .2.2 .2.2 .2.2 .2.2 .2.1 (t)	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2 2.5 1.7 1.3	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35 40 44 40 26 20 22 35	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .3 .2 .2 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .2 1.6 1.4 .3 .3 .2 .1 .1 .6 .4 .3 .3 .2 .1 .1 .6 .4 .4 .5 .8 .6 .4	Septe mber  29 30 41 81 63 73 83 84 64 53 24 31 19 37 52 42 46 40 66 40 46 48 30 14	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
30 8.1 32 .7 .7 46 .1 1.7 35 .2 31 4.6 53 .6 .6 35 .1 Total .1 55.2 25.7 119.5 25.9 14.2 1.7 Total discharge for years (cfs-days)	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.2 2.3 2.3 2.3 2.1 2.3 2.1 2.3 2.1 2.3 2.3 2.9 4.3 2.9 4.3 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	July  48 45 45 40 30 26 35 34 41 145 38 40 42 30 34 29 30 40 31 39 15 11 12 8 20 71	0.6 .5 .5 .5 .3 .3 .6 .6 s10 1.6 .9 .6 .4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2 .9	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40 44 40 28 20 22 35 44	0.3 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .3 .2 .2 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .3 .3 .2 .1 .1 .1 .6 .4 .4 .6 .4	Septe mber  29 30 41 81 83 83 84 64 53 24 34 19 52 42 46 60 66 40 46 48 30 14	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
Total 155.2 - 25.7 119.5 25.9 14.2 1.7  Total discharge for years (cfs-days) 4,430.4	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.3 2.7 2.3 2.0 1.7 1.3 1.2 1.2 1.9 9.3.5	July  48 45 45 40 30 26 35 34 41 145 38 40 29 30 40 31 39 15 11 12 8 20 71 78 80 70	0.6 .5 .5 .5 .3 .2 .3 .6 .6 .6 .5 .10  1.6 .9 .6 .4 .3 .2 .2 .2 .2 .2 .1 (t) (t) (t) .1 .2 .2 .2 .2 .2 .2 .2 .2 .3	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2 .9 1.3 1.5 1.3 1.5 1.3 1.2 2.5 1.7 1.3	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 37 42 25 40 44 40 26 20 22 35 44 40 35	0.3 .2 .2 .2 .2 .1 .1 .4 s20 1.1 .4 s20 1.1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .2 1.6 1.4 .3 .3 .2 2.1 .1 .2 1.6 .4 .3 .3 .2 .1 .1 .1 .3 .8 .6 .4 .4 .6 .8	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 46 40 66 40 46 48 30 14 27 34 42 41	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
Total discharge for years (cfs-days)	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.2 2.7 2.3 2.0 1.4 1.3 1.2 9.3 5.5 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.2 9.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1	July  48 45 40 30 28 35 34 41 145 38 40 42 30 31 39 15 11 12 8 20 71 78 80 70 32	0.6 .5.5 .5.5 .3 .6.6 s10 1.6.9 .6.6 .4.3 .2.2 .2.2 .2.2 .2.2 .2.2 .2.2 .2.2	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.3 1.5 1.3 1.2 .9 1.2 2.5 1.7 1.3	August  40 35 40 40 50 55 46 40 37 51 103 29 25 14 22 47 37 42 35 40 26 20 22 35 44 40 36 36 46	0.3 .2 .2 .2 .2 .1 .1 .4 s20 1.1 .4 s20 1.1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .2 1.6 1.4 .3 .3 .2 2.1 .1 .2 1.6 .4 .3 .3 .2 .1 .1 .1 .3 .8 .6 .4 .4 .6 .8	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 46 40 66 40 46 48 30 14 27 34 42 41	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.2 2.7 2.3 2.0 1.7 1.3 1.2 9 9 9.5 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	July  48 45 40 30 28 35 34 41 145 38 40 42 30 31 39 15 11 12 8 20 71 78 80 70 32	0.6 .5 .5 .5 .3 .2 .3 .6 .6 .6 .5 .10  1.6 .9 .6 .4 .3 .2 .2 .2 .2 .2 .2 .1 (t) (t) .1 .2 .2 .2 .3 .8 sa 4 .7 .6	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2 2.5 1.7 1.3	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35 40 26 20 22 35 44 40 35 46 35	0.3 .2 .2 .2 .2 .1 .1 .1 .4 s20 1.1 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .2 1.6 1.4 .6 .4 .3 .3 .2 .1 .1 .6 .4 .8 .8 1.7	Septe mber  29 30 41 81 63 73 83 84 64 53 24 34 19 37 52 42 46 46 40 66 40 46 48 30 14 27 34 42 41	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
	1	4.5 3.9 4.3 3.5 3.2 3.6 7.0 5.6 23 16 8.6 5.7 4.5 3.5 3.3 2.7 2.3 2.0 1.7 1.3 1.2 1.9 9.3 5.6 17 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	July  48 45 45 40 30 28 35 34 41 145 38 40 42 30 34 29 30 40 31 39 15 11 12 8 20 71 78 80 70 32 53	0.6 .5 .5 .5 .3 .6 .6 .6 .6 s10 1.6 .9 .6 .4 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	3.0 2.3 1.9 1.7 1.4 1.2 1.2 .9 3.0 55 14 6.2 3.7 2.7 2.1 1.8 1.5 1.3 1.2 .9 1.2 2.5 1.7 1.3	August  40 35 40 40 50 55 46 40 37 51  103 29 25 14 22 47 37 42 35 40 44 40 26 20 22 35 44 40 35 46 35	0.3 .2 .2 .2 .2 .1 .1 .4 s20 1.1 .4 s20 1.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	0.5 .4 .3 .3 .3 .2 .1 .1 .2 1.6 1.4 .6 .3 .3 .2 .1 .1 .1 .5 .8 .6 .4 .6 .8 1.7 14.2	Septe mber  29 30 41 81 63 73 83 84 64 53 24 31 937 52 42 46 66 40 66 40 48 30 14 27 34 42 41 35	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)

Total load for year (tons)

s Computed by subdividing day.
t Less than 0, 05 ton.
a Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN -- Continued

# SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis. B, bottom withdrawal tube; D, decandation; P, pipette; S, aswer, M, in native water; W in distilled water: C. chemically disappedd. M. machanically disappesed.

		Methods of analysis	,	BSWCM	BSWCM	BSWCM	BSNM	BSWCM
			1.000					
			0.500					
			0.350					
		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350 0.500 1.000		100			
		ize, in m	0.125	1	66	100	100	100
rsea		ndicated s	0.062	100	86	66	86	8
ally dispe	sediment	ner than i	0.031	86	93	91	82	88
mecnanic	Suspended sediment	Percent fi	0.016	93	8	82	84	96
rsea; m,	ะ		800.0	98	29	73	65	94
any dispe			0.004	₩8	57	99	21	93
, cnemic			0.002	18	4	62	4	<b>8</b>
w, in distilled water; C, chemically dispersed; M, mechanically dispersed		Concentration of suspension	analyzed (ppm)	289	2,110	1,640	1,400	656
w, in d			of sample (ppm)	285	1,740	1,260	1,260	346
	Water	tem-	ature (°F)					
		Discharge (cfs)		94	484	208	208	29
		Time		6:00 p. m.	1:00 a.m.	2:35 a. m.		7:15 a. m.
	i	Date of collection		Mar. 4, 1955	Mar. 22	Mar. 22	Mar. 22	July 10

### MASSIE CREEK AT WILBERFORCE, OHIO

MASSIE CREEK AT WILDERFORCE, ONIO

LOCATION.--At gaging station at bridge on Wilberforce-Clifton road, 0.5 mile northwest of Wilberforce, Greene County, 1.7 miles upstream from Clark Run, and 3.5 miles northeast of Xenia.

DRAINAGE AREA.--64.3 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1952 to September 1954.

Water temperatures: September 1952 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 78°F Aug. 21; minimum, freezing point on several days during December, January, February, and March.

Sediment concentrations: Maximum daily, 1,140 tons Mar. 5; minimum daily, 1 ppm Nov.29-30, Dec. 18, Apr. 8-9.

Sediment loads: Maximum daily, 1,140 tons Mar. 5; minimum daily, less than 0.05 ton on several days during November, December, and September.

EXTREMES, 1952-55.--Water temperatures: Maximum, 79°F Aug. 15, 1953; minimum, freezing point on many days during winter months.

Sediment concentrations: Minimum daily, 1 ppm on many days during October 1952, April, November, December, 1953, March, November, December, 1954, and April 1955.

Sediment loads: Maximum daily, 1,140 tons Mar. 5, 1955; minimum daily, less than 0.05 ton on many days during October 1952, July 1953 to February 1954, Jily to September, November, December, 1954, and September 1955.

REMARKS.--Flow affected by ice Jan. 24 to Feb. 6, Feb. 13. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

			<u>/</u> O	nce-daily	measnren	nent at ap	proximat	ely 8:30 a	. m <u>.</u> /			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65			38				54	60	73	75	61
2	<b>6</b> 8	37	40	39	32	36	60	57	63			
3	68	38	38			38	70		63	73	75	55
4		40	32	42		49		54		71	74	
5		46	37	45		48		62	68	74	75	58
6		46			31		41		70			58
7				39	32		45				72	
8		39		37	32		49	52	66	71	72	57
9	57	40	35			41			61	73	)	55
10	62	41	35	38		41	48	52	61	73	72	60
11	61	41				52		57	64		71	
12	66			36				56	64	70	67	
13	67	41	35			41	53	58	60	70	\	47
14	69	43	31			41	53	58	60	76	66	51
15	60	43	35	32			50			75	65	55
16		42	35	32			45		64	73	70	
17	48	43	\	\	33	58	53	57	64			58
18	47	44	33		34		53			73	74	
19	40	53			36	48	53			73		54
20	45			32	40	40	55	58	70	71	73	55
21	46	46		32		49		64	70	71	78	56
22	47	46		31	36	52	52		68	73	72	
23		39				34	54		67		70	58
24	48		32	32	37		51	67			66	55
25	58	41			37	35	51	67	60	75	67	
26	55	41	33	31				62	61	70	65	
27	57	38	32		42		46	68	65	73	66	
28	55	38			47	32	44	71	65			51
29	49	39	37				48		66		69	50
30	44	37	38			50	54	60	70	73	66	
31			37			45		60		75	60	
Aver-		42							65			

### LITTLE MIAMI RIVER BASIN

### LITTLE MIAMI RIVER BASIN--Continued

### MASSIE CREEK AT WILBERFORCE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

		October			Novemi	œr		Decemb	er
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean concen-	Tons	dis-	Mean	Tons	dis-	Mean concen-	Tons
	charge (cfs)	tration	per	charge	concen- tration	per	charge	tration	per
		(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	1.3	15	0.1	4.8	20	a 0.3	6.0	2	(t)
2 3	1.4 1.8	17 16	.1	5.0 4.8	21 10	.3	6.0 5.5	4 8	0.1
4	2.2	17	.1	4.8	15	.2	5, 5	11	.2
5	1.9	19	.1	5.0	11	. 1	5, 3	11	.2
6	14		e 10	5, 0	14	. 2	4.8	11	a.1
7	8.7	43	1.0	4.8	11	.1	4.2	11	a.1
8 9	6.3 4.1	19 25	.3	4.6 4.4	10 8	.1	4.4	11 10	a.1
10	3.2	29	2	4.2	3	(t)	5.0 5.0	6	.1 .1
				Ï i			Ĭ		ĺ
12	4.6 6.8	55 78	b.7 1.4	4. 1 4. 1	8 16	.1 a.2	4.6 4.8	6 5	a.1 a.1
13	4.8	48	6	4.1	20	.2	6.0	5	".i
14	5.7	46	.7	4.1	18	.2	6.8	5	, 1
15	8.4	30	.7	4.1	6	.1	7.7	5	.1
16	8.1	20	a.4	4.1	2	(t)	7.7	4	. 1
17 18	8.4	35 37	.8	4.2	7	.1	8.1	2	(t)
19	6. 5 5. 5	33	. 6 . 5	4. 4 4. 4	16	. 1 . 2	8.4 8.7	1	(t)
20	4.8	40	.5	4.4	15	.2	8.1		
21	4.4	31	.4	4.2	6	.1	7.7		e.1
22	4. 1	41	.4	4.1	11	.1	6.5		} "."
23	3.9	45	a.5	4.2	10	.1	7.1		
24 25	3, 5 3, 4	38 26	.4 .2	5, 3 5, 5	10 10	a.1 .1	8.1 7.1		11
			i l						ľ.
26 27	3.9 5.5	33 59	.3	5. 0 5. 5	9 5	.1 .1	7.1	11 12	. 2 . 2
28	5, 0	40	.5	6.3	2	(t) 1	27	42	s4,5
29	5. 3	25 20	.4	6.5	1	(t)	67	85	15
30	5. 0 4. 6	20	.3 a.2	6.3	1	(t)	83 58	104 27	23 4, 2
Total .	157. 1		23.7	142.3		3.7	408.9		49. 5
		January			February			March	
1	47	7	0, 9	11	19	0, 6	225	190	a 120
2	48	3	.4	15	66	2.7	161	59	26
4	42 50	2 6	a.2 a.8	13 12	55 46	a2 al	122 267	37	12 e 650
5	69	29	5.4	13	40	al	643	596	s 1, 140
6	105	117	s 35	100	82	s 35	273	120	a 90
7	94	50	13	216	390	227	161	60	a 25
8	67 54	27	4.9	134	140	51	122	40	a 13
9 10	45	117 132	17 16	162 229	308	e 160 sb 220	108 91	35 38	10 9, 3
		400	- 10				}		
11	38 34	120 115	a 12 10	158 84		e30 e35	96 90	48 40	12 a 10
13	32	120	a 10	70		e 30	73	28	5, 5
14	27	120	a 9	64		e 14	62	19	3.2
15	27	128	9.3	52		e 8	60	16	a 3
16	26	120	8.4	94		e 40	55	14	a 2
17	23 18	110 114	a 7 5, 5	139 107	88 31	33 9.0	45 45	12 10	1. 4 1. 2
19	17	110	a 5	85	22	5.0	39	9	.9
20	18	105	5, 1	84	33	7.5	39	16	s 2. 2
21	16	126	5, 4	270	220	160	408	370	sb 550
22	19	158	8.1	457	350	432	850	413	s 1, 020
23 24	14 13	150 133	a 6 4. 7	235	110 50	a 70	306	63 40	s 55
25	12		1.1	153 121	35	21 11	177 133	40 38	a 19 14
- 1									
26	11 10		e 2	108 280	20 229	a 6 s 186	117 90	35 30	a11 a7
28	10		**	202	318	173	89	12	2. 9
29 30	10 10						98 89	12 12	a 3 2, 9
31	10						77	10	2.1
Totai .	1,016		213.1	3,668		1, 970. 8	5, 211		3,823.6
e Estim	otod								

e Estimated.

e Estimated.

S Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

### OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASIFS

### LITTLE MIAMI RIVER BASIN -- Continued

### MASSIE CREEK AT WILBERFORCE, OHIO -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April			May			June	
			d sediment			d sediment			sediment
Day	Mean dis-	Mean		Mean	Mean		Mean	N*≎an	
J.,	charge	concen-	Tons per	dis- charge	concen-	Tons per	dis- charge	concen-	Tons per
	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tration	day
<del>-</del>		(ppm)		10	(ppm)		10	(ppm)	
1 2	68 60	9 4	1,6 ,6	18 18	2 2	0, 1 , 1	13 10	33 39	1.1 1,0
3	54	2	.3	17	2	a.1	9, 2	20	, 5
4	45	2	a.2	16	5	.2	8, 5	25	a.6
5	42	2	.2	16	8	.3	8.2	32	.7
6	40								- 0
6 7	48 42	2 2	.2 .2	15 15	6 5	a.2	9.8 13		e 2 e 2
8	36	1	.1	15	2	a.2 .1	13	47	1.6
9	33	i	a.1	14	3	a. 1	111	22	. 6
10	31	2	.2	17		e 2	13	15	. 5
1		_			_				_
11	33 34	4	a.4	24	45	sb3	16	18	. 8 1. 0
12 13	33	6 19	.6 1,7	18	6	.3	19 18	20 19	
14.	32	19	1.6	18 20	9 7	. 4 . 4	16	16	.9 .7
14 15	30	15	1.2	16	7	a.3	14	25	a.9
							l.	-	
16	26	20	1.4	14	9	.3	10	29	. 8
17	25	16	1.1	13	8	.3	8.8	20	. 5
18 19	23 38	17	1.0 e7	12 12	7 6	a.2	7.6 7.0	20 25	a.4 a.5
20	34	19	1.7	11	5	a.2 .1	6.8	25	.4
				i **			i		
21	32	12	a1	11	7	.2	7.0	20	. 4
22	28	. 8	.6	11	7	a.2	8, 5	18	.4
23	25 34	2 21	1.9	16	15	e3 .5	14 21		e 3
24 25	34	18	1.6	13 13	12	. 3	32	85	e 4 b 7
20	54		1.0	"	14		32	"	
26	30	7	a.6	11	15	.4	37	36	3.6
27	26	2	.1	9.2	15	.4	29	30	2.3
20	24	5	.3	12	38	s1.3	19	20	1.0
29 30	22 19	2 2	.1	23	20	al a	15 12	17 19	. 7 . 6
31	19		.1	19 15	16 13	.8 .5	12	19	. 0
Total.	1,041		27.8				400.4		40. 5
====	1,041		41.0	472.2		17, 6	426, 4	لــــــــــــــــــــــــــــــــــــــ	40. 3
		July			August				
							<u> </u>	September	
<u>.</u>	9. 5	23	0.6	6.8	25	0, 4	2, 2	32	0.2
2	8.8	23 25	a.6	5.4	25 25	a 4	2.1	32 30	a.2
2 3	8. 8 16	23 25	a.6 e8	5.4 4,5	25 25 24	a.4 ,3	2.1 2.0	32 30 20	a.2 ,1
2 3 4	8. 8 16 20	23 25  168	a.6 e8 9.1	5. 4 4. 5 3. 8	25 25 24 20	a.4 ,3 .2	2, 1 2, 0 1, 8	32 30 20 20	a.2 .1 a.1
2 3	8.8 16 20 9.9	23 25  168 78	a.6 e8	5. 4 4. 5 3. 8 3. 8	25 25 24 20 20	a.4 .3 .2 .2	2.1 2.0 1.8 1.8	32 30 20 20 23	a.2 .1 a.1 .1
2 3 4 5	8.8 16 20 9.9	23 25  168	a.6 e8 9.1 2.1	5. 4 4. 5 3. 8 3. 8	25 25 24 20 20 20	a.4 .3 .2 .2	2. 1 2. 0 1. 8 1. 8	32 30 20 20 23	a.2 .1 a.1 .1
2	8.8 16 20 9.9 7.3	23 25  168 78 70	a.6 e8 9.1 2.1 a1 e 10	5. 4 4, 5 3. 8 3. 8 3. 3	25 25 24 20 20 20 20	a.4 .3 .2 .2 a.2 .2	2.1 2.0 1.8 1.8 1.7	32 30 20 20 23 13	a.2 .1 a.1 .1 .1 a.1
2 3 4 5 6 7 8	8.8 16 20 9.9 7.3 13 55	23 25  168 78 70  580	a.6 e8 9.1 2.1 a1 e 10 sb 100	5. 4 4. 5 3. 8 3. 8 3. 3 3. 2 3. 0	25 25 24 20 20 20 20 24 12	a.4 .3 .2 .2 a.2 .2	2.1 2.0 1.8 1.8 1.7 1.7	32 - 30 - 20 - 20 - 23 - 13 - 13 - 12 -	a.2 .1 a.1 .1 .1 a.1
2	8.8 16 20 9.9 7.3 13 55 35	23 25  168 78 70  580 163	a.6 e8 9.1 2.1 a1 e 10 sb 100	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8	25 25 24 20 20 20 20 24 12 9	a.4 .3 .2 .2 a.2 .1 a.1	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5	32 30 20 20 23 13	a.2 ,1 a.1 .1 a.1 .1 (t)
2	8. 8 16 20 9. 9 7. 3 13 55 35	23 25  168 78 70  580 163	a.6 e8 9.1 2.1 a1 e 10 sb 100 15 31	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 2.8	25 25 24 20 20 20 20 24 12	a.4 .3 .2 .2 a.2 .2	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5 4. 5	32 - 30 - 20 - 20 - 23 - 13 - 13 - 12 - 10	a.2 .1 a.1 .1 a.1 .1 (t) e.3
2 3 4 5 6 7 8 9 10	8. 8 16 20 9. 9 7. 3 13 55 35 81	23 25  168 78 70  580 163 144	a.6 e8 9.1 2.1 a1 e 10 sb 100 15 31	5. 4 4. 5 3. 8 3. 8 3. 3 3. 2 3. 0 2. 8 2. 8	25 25 24 20 20 20 24 12 9	a.4 .3 .2 .2 a.2 .1 a.1 .1	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5 4. 5	32 - 30 - 20 - 20 - 23 - 13 - 13 - 12 - 10	a.2 .1 a.1 .1 a.1 (t) e.3
2	8.8 16 20 9.9 7.3 13 55 35 81	23 25  168 78 70  580 163 144	a.6 e8 9.1 2.1 e10 sb100 15 31 a20 9.9	5.4 4.5 3.8 3.8 3.2 3.0 2.8 2.8	25 25 24 20 20 20 24 12 9 10	a.4 .3 .2 .2 .2 .1 a.1 .1	2.1 2.0 1.8 1.8 1.7 1.7 1.6 1.5 4.5	32 - 30 20 20 23 13 13 12 10	a.2 .1 a.1 .1 a.1 (t) e.3 e2 e.3
2	8.8 16 20 9.9 7.3 13 55 81 57 33 22	23 25 	a.6 e8 9.1 2.1 a1 e 10 sb 100 15 31 a20 9.9 3.4	5.4 4.5 3.8 3.8 3.2 3.0 2.8 2.8 40 24	25 25 24 20 20 20 24 12 9 10	a.4 .3 .2 .2 a.2 .1 a.1 .1 e18 4.3	2.1 2.0 1.8 1.8 1.7 1.7 1.6 1.5 4.5	32 - 30 - 20 - 20 - 23 - 13 - 12 - 10 25	a.2 .1 a.1 .1 a.1 (t) e.3 e2 e.3
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16	23 25  168 78 70  580 163 144 140 111 57 53	a.6 e8 9.1 2.1 e10 sb100 15 31 a20 9.9 3.4 2.3	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 2.8 40 24 9.9 6.0	25 25 24 20 20 20 24 12 9 10	a.4 .3 .2 .2 .2 .1 a.1 a.1 e18 4.3 a2	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5 4. 5 9. 2 4. 1 3. 7 2. 7	32 30 25 15	a.2 .1 a.1 .1 .1 a.1 .1 (t) e.3
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 57 33 22 16	23 25 26 78 70 580 163 144 140 111 57 53 58	a.6 e8 9.1 2.1 a1 e 10 sb 100 15 31 a20 9.9 3.4 2.3 2.0	5.4 4.5 3.8 3.8 3.3 3.2 2.8 2.8 40 24 9.9 6.0 4.6	25 24 20 20 20 24 12 9 10  66 60 55 15	a.4 .3 .2 .2 a.2 .1 a.1 .1 e18 4.3	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5 4. 5 9. 2 4. 1 3. 7 2. 7 2. 3	32	a.2 .1 a.1 .1 a.1 (t) e.3 e2 e.3 .2 .1
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13	23 25  168 78 70  580 163 144 140 111 57 53 58	a.6 e8 9.1 2.1 a1 e 10 sb 100 15 31 a20 9.9 3.4 2.3 2.0	5.4 4.5 3.8 3.8 3.3 3.2 2.8 2.8 2.8 2.9 6.0 4.6	25 24 20 20 20 24 12 9 10  66 60 55 15	a.4 .3 .2 .2 .2 .1 a.1 .1 e18 4.3 a2 .9	2. 1 2. 0 1. 8 1. 8 1. 7 1. 7 1. 6 1. 5 4. 5 9. 2 4. 1 3. 7 2. 7 2. 3	32 - 30 20 20 20 23 13 12 10 25 18 15 18	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 a.2 1.1
2. 3	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13	23 25 	a.6 e8 9.1 2.1 a1 e10 sb100 15 31 a20 9.9 3.4 2.3 2.0	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6	25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .2 .1 a.1 .1 e18 4.3 a2 .9	2. 1 2. 0 1. 8 1. 8 1. 7 1. 6 1. 5 4. 5 4. 5 4. 1 3. 7 2. 7 2. 3	32 30 20 20 23 13 12 10 25 15 18 15 11	a.2 .1 a.1 .1 a.1 (t) e.3 e2 e.3 .2 .1 .1
2. 3. 4	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13	23 25  168 78 70  580 163 144 140 111 57 53 58	a.6 e8 9.1 2.1 a1 e10 sb100 15 31 a20 9.9 3.4 2.3 2.0	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 2.8 40 24 9.9 6.0 4.6	25 24 20 20 20 24 12 9 10  66 60 55 15	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2	2.1 2.0 1.8 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 3.7 2.7 2.3	32	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 .1 .1
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 57 33 22 16 8. 8 7. 6 8. 5	23 25  168 78 70  580 163 144 140 111 57 53 58 55 56 45	a . 6 e 8 9 . 1 2 . 1 e 10 eb 100 b 15 31 a 20 9 . 9 3 . 4 2 . 3 2 . 0 1 . 6 a 1 . 9	5.4 4.5 3.8 3.8 3.2 3.0 2.8 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2 .1	2.1 2.0 1.8 1.7 1.7 1.5 4.5 9.2 4.1 2.7 2.3	32	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 .1 .1 a.1 .1
2	8. 8 16 20 9. 9 7. 3 13 55 81 57 32 16 13 11 8. 8 7. 6 8. 5 7. 0	23 25  168 78 70  580 163 144 140 111 57 58 58 55 50 44 45 34 25	a.6 e8 9.1 2.1 a1 e10 sb100 15 31 a20 9.9 3.4 2.3 2.0	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 2.8 40 24 9.9 6.0 4.6	25 24 20 20 20 24 12 9 10  66 60 55 15	a.4 .3 .2 .2 .2 .1 a.1 a.1 e18 4.3 a2 .9 .2 .1 a.1	2.1 2.0 1.8 1.7 1.7 1.5 4.5 9.2 4.1 3.7 2.7 2.3 2.1 2.0 1.8 1.8	32 30 30 20 20 20 23 13 13 12 10 25 15 18 15 11 11 12 15	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 .1 .1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11 8.8 8.5 7.6	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .8 .8 .8 .8 .8 .8 .8 .8 .8 .8 .8 .8	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.2 3.2	25 25 24 20 20 20 20 24 12 9 10  66 60 55 15	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2 .1 a.1 a.1	2.1 2.0 1.8 1.8 1.7 1.7 1.6 4.5 4.5 9.2 4.1 3.7 2.7 2.3 2.1 2.0 1.8 1.8	32	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 .1 .1 .1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11 8.8 7.6 8.5 7.0 5.8	23 25 	a . 6 e 8 9 . 1 2 . 1 a 1 e 10 sb 100 15 31 a 20 9 . 9 3 . 4 2 . 3 2 . 0 1 . 6 a 1 . 9 . 8 . 5	5.4 4.5 3.8 3.8 3.2 3.0 2.8 40 24 6.0 4.6 4.1 3.8 3.4 4.3 3.2	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .2 .1 a.1 a.1	2.1 2.0 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 3.7 2.7 2.3 2.1 2.0 1.8 1.8	32	a.2 a.1 a.1 a.1 (t) e.3 e.3 e.3 .2 e.3 .1 .1 1 a.1 a.1 a.1
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 57 33 22 16 13 11 8. 8 7. 6 8. 7. 6 8. 7. 0	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .5	5.4 4.5 3.8 3.8 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 3.2 3.2	25 25 24 20 20 20 24 12 9 10  66 60 55 15 11 11 11 12  30 82	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .1 a.1 a.1 a.1 a.1	2.1 2.0 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.7 2.3 2.1 2.0 1.8 1.8 2.0 2.6 5.6	32	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 e.3 .2 i.1 .1 a.1 a.1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11.8.8 7.6 8.5 7.0 9.8 9.9	23 25 	a . 6 e 8 9 . 1 2 . 1 a 1 e 10 sb 100 15 31 a 20 9 . 9 3 . 4 2 . 3 2 . 0 1 . 6 a 1 . 9 . 8 5 . 5 a . 4 a . 3	5.4 4.5 3.8 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 3.2 3.2 3.2	25 25 24 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2 .1 a.1 a.1 a.1	2.1 2.0 1.8 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 2.1 2.0 1.8 1.8 2.0 2.6 6.8	32 30 30 20 20 20 23 13 13 12 10 25 15 18 15 11 12 15 16 19 50 44	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 .2 1.1 a.1 a.1 a.1 a.1 a.1 a.1
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 57 33 22 16 13 11 8. 8 7. 6 8. 7. 6 8. 7. 0	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .5	5.4 4.5 3.8 3.8 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 3.2 3.2	25 25 24 20 20 20 24 12 9 10  66 60 55 15 11 11 11 12  30 82	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .1 a.1 a.1 a.1 a.1	2.1 2.0 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.7 2.3 2.1 2.0 1.8 1.8 2.0 2.6 5.6	32	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .2 e.3 .2 i.1 .1 a.1 a.1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11 8.8 7.6 5.7,0 4.8 4.5	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .5 .4 .5 .4 .5 .2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 2.3 3.2 3.2 3.2 3.3	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2 .1 a.1 a.1 a.1 a.1	2.1 2.1 2.8 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 2.0 1.8 1.8 2.0 6.8 4.8	32 30 30 20 20 23 13 13 12 10 25 15 18 15 11 11 12 15 16 16 19 50 44 425 8	a.2 .1 a.1 .1 (t) e.3 e2 e.3 .1 .1 a.1 a.1 a.1 a.1 b.8 a.3 a.3
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 57 33 22 16 13 11 8. 8 7. 6 8. 5 7. 0 4. 8 4. 8 4. 5 4. 5 4. 6 4. 6 4. 6 4. 6 4. 6 4. 6 4. 6 4. 6	23 25 	a . 6 e 8 9 . 1 2 . 1 a 1 e 10 sb 100 15 31 a 20 9 . 9 3 . 4 2 . 3 2 . 0 1 . 6 a 1 . 9 . 8 5 . 5 a . 4 . 5 a . 3 . 2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.2 3.2 14 22 5.0 4.5 3.3 3.2	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .2 .1 a.1 e18 4.3 a2 .9 .2 .1 a.1 a.1 a.1 a.1	2.1 2.0 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.7 2.3 2.1 2.0 1.8 1.8 2.0 2.6 6.8 4.8	32	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 .2 e.3 .2 i.1 .1 a.1 a.1 a.1 a.1 a.1 a.1 a.
2	8.8 16 20 9.9 7.3 13 55 81 57 33 22 16 13 11 8.8 7.0 6.5 7.0 5.8 4.5 4.5	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .3 2 .0 1 .6 a 1 .9 .8 .5 .5 a .4 a .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 2.2 5.9 5.0 4.5 3.3 2.8 3.2 3.2 3.2 4.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .1 a.1 e18 4.3 a2 .9 .1 a.1 a.1 a.1 e25 s29 1.3 a.6	2.1 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 2.0 1.8 1.8 2.6 6.8 4.8 4.3 4.5	32 30 30 20 20 20 23 13 13 12 10 25 15 11 11 12 15 16 19 50 44 25 8 13 20	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11 8.8 7.6 8.5 7.0 4.8 4.5 4.5 4.1 3.7 8.9 26	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .5 .4 .5 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 3.4 3.4 3.2 22 5.0 4.5 3.3 2.8 3.3 2.8 3.3 3.3 2.8 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 a.2 .1 a.1 e18 4.3 a2 .1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1	2.1 2.1 2.8 1.8 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 8 2.0 1.8 1.8 2.0 6.8 4.5 6.8	32	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 2.1 1.1 a.1 a.1 a.1 a.1 a.1 a.1 a
2	8.8 16 20 9.9 7.3 13 55 81 57 33 22 16 13 11 8.8 7.0 6.5 7.0 5.8 4.5 4.5	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .3 2 .0 1 .6 a 1 .9 .8 .5 .5 a .4 a .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.8 3.4 2.2 5.9 5.0 4.5 3.3 2.8 3.2 3.2 3.2 4.0 4.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 .1 a.1 e18 4.3 a2 .9 .1 a.1 a.1 a.1 e25 s29 1.3 a.6	2.1 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 2.0 1.8 1.8 2.6 6.8 4.8 4.3 4.5	32 30 30 20 20 20 23 13 13 12 10 25 15 11 11 12 15 16 19 50 44 25 8 13 20	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1
2	8.8 16 20 9.9 7.3 13 55 35 81 57 33 22 16 13 11 8.8 7.6 8.5 7.0 4.8 4.5 4.5 4.1 3.7 8.9 26	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .9 .8 .5 .4 .5 .4 .5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	5.4 4.5 3.8 3.3 3.2 3.0 2.8 40 24 9.9 6.0 4.6 3.4 3.4 3.2 22 5.0 4.5 3.3 2.8 3.3 2.8 3.3 3.3 2.8 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 .2 a.2 .1 a.1 e18 4.3 a2 .1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1	2.1 2.1 2.8 1.8 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 8 2.0 1.8 1.8 2.0 6.8 4.5 6.8	32 30 30 20 20 20 23 13 13 12 10 25 15 11 11 12 15 16 19 50 44 25 8 13 20	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 2.1 1.1 a.1 a.1 a.1 a.1 a.1 a.1 a
2	8. 8 16 20 9. 9 7. 3 13 55 35 81 11 8. 8 7. 6 8. 5 7. 0 4. 8 4. 8 4. 5 4. 1 3. 7 8. 9 26 20 10	23 25 	a .6 e 8 9 .1 2 .1 a 1 e 10 sb 100 15 31 a 20 9 .9 3 .4 2 .3 2 .0 1 .6 a 1 .5 .4 .5 a .4 a .3 .2 .2 e 2 e 6 1 .8	5.4 4.5 3.8 3.8 3.2 3.0 2.8 40 24 9.9 6.0 4.6 4.1 3.4 3.4 3.4 3.2 14 22 5.0 4.5 3.3 2.8 2.8 3.3 3.2 3.0 4.0 4.0 4.0 4.0 4.0 4.0 5.0 5.0 6.0 4.0 5.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	25 25 24 20 20 20 24 12 9 10 	a.4 .3 .2 a.2 .1 a.1 e18 4.3 a2 .2 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1	2.1 2.1 2.8 1.8 1.7 1.7 1.6 1.5 4.5 9.2 4.1 2.7 2.3 2.1 2.0 1.8 1.8 2.0 2.6 6.8 4.5 6.8	32 30 30 20 20 20 23 13 13 12 10 25 15 11 11 12 15 16 19 50 44 25 8 13 20	a.2 a.1 a.1 a.1 (t) e.3 e2 e.3 2 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1 a.1

e Estimated.

E Estimated.

S Computed by subdividing day.

Less than 0.05 ton.

A Computed from estimated concentration graph.

b Computed from partly estimated graph.

# MASSIE CREEK AT WILBERFORCE, OHIO .- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decantidion; P. pipette; S. seree, Ni, in native water; W. h. distilled water; C. chemically dispersed; M. mechanically dispersed.

:	Methods of analysis		BSWCM	BSWCM	BSWCM
		1.000			
		0.500	98	88	:
		0.350			
	Percent finer than indicated size, in millimeters	0.250	6 6 6 6	g g	:
:	ize, in mi	0.125	98	98	100
	ndicated s	0.062	98	88	88
ediment	ner than	0.016 0.031	88	8 8	86
Suspended sediment	Percent fi	0.016	70 87	86 86	96
ซึ		0.008 0.	53	5 5	90
		0.00	42 79	09 69	75
		0.002	33 76	<b>%</b> 8	28
	Concentration of suspension	analyzed (ppm)	1, 120 926	1,370	2, 010
	Concentration	of sample (ppm)	476 560	635	1,260
Water	tem- per-	ature (°F)			
	Dis- charge	(cfs)	346 627	_	
	Time		11:30 p.m. 2:30 p.m.	1:40 a.m. 8:50 a.m.	8:00 a.m.
í	Date of collection		Feb. 9, 1955 Mar. 5	Mar. 22	July 8

### TODD FORK NEAR ROACHESTER, OHIO

LOCATION. --At gaging station at bridge on State Highway 123, 0.3 mile downstream from Lick Run, 1.6 miles southeast of Roachester, Warren County, 2} miles southwest of Morrow, and 4 miles upstream from mouth.

MOTOW, and 4 miles upstream from mouth.

DRAINAGE AREA.--234 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1952 to September 1954.

Water temperatures: September 1952 to September 1955.

Sediment records: September 1952 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 92°F July 27; minimum, freezing point on several days during December to February.

Sediment concentrations: Maximum daily, 1,650 ppm Feb. 27; minimum daily, 1 ppm on several days during November and December.

Sediment loads: Maximum daily, 21,800 tons Mar. 22: minimum daily, less than 0.05 ton

several days during November and December.

Sediment loads: Maximum daily, 21,800 tons Mar. 22; minimum daily, less than 0.05 ton on many days during November, December, and September.

EXTREMES, 1952-55.--Water temperatures: Maximum, 92°F July 31, 1953, July 27, 1955; minimum, freezing point on several days during winter months.

Sediment concentrations: Minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 53,000 tons (estimated) July 21, 1954; minimum daily, less than 0.05 ton on many days.

REMARKS.--Flow affected by ice Jan. 26-28, Feb. 2, 13-14. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955
/Once-daily measurement at varying hours 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	43	42	40		46	55	70	75	81	90	
2	73	39	39	44	32	46	59			88	89	
3	76	42	35	44	32	44	58	75	78	85	91	77
4	80	42	39	44	33	53		76	77		88	85
5	75	42		48	33	47	61	77	79	86	90	80
6	65	44	34	46	34	42	61	74	75 72 <b>6</b> 9	87	89	77
7	61	45	35	40	35	32	54		72	82	8 <b>6</b>	80
8	63	47	34	40	35	41	55	69	69	83	84	77
9	67	46	36		40	45	56	69	69		84	81
10	70	46	35		40		63	69		79	85	77
11	77	45	36 35	39 36	32	55	61	70	68	84	82	
12	73	48	35	36			64	68		81	83	72
13	72	49	35	32				65	64	87	80	71
14	71	. 50	35	32	33	63	64	65	70			75
15	61	51	35	36	35	55	63	71	71	81	83	75 79
16		50	35 36	36	34	49	66	75 71	80		82	77
17	57	53	36	34		45	68	71	83	83	88	81
18	55	55	36	35		47	69			80		
19	53	53		33	41	50	69		77	84	85	80
20	54	50	33 32	33 35	43		68	81	82	86	85 87	79
21	53 55	47	34	34	40	52	67	75		87		82
22	55	46	34	34	37	54	68	74	81			73
23	56	46	36	34 32	41	47	64	77	77	82		71
24	56	42	36	34	41	50	65	75	82	83	79	71
25	56 58	40	36		42	44	58	75 72	81 77 82 71	88	80	70
26	57 59	41	37 38	33	40		57	78	75 79	89		68
27	59		38		47	34	59	77	79	92		67
28	54	41	44		40	40	65	76		80	83	74
29		39	42			44	67		81	81		70
30	35	39	36					67	82	86		66
31	44		38			52		73		87		<u> </u>
Aver- age	62	46	36		37	47	62	73	76	84		75

### LITTLE MIAMI RIVER BASIN--Continued

### TODD FORK NEAR ROACHESTER, OHIO -- Continued

Suspended sediment, water year October 1954 to September 1955

			ended Bedin					Dear	
		October		<b></b>	November			December	
		Suspende	d sediment		Suspende	ed sediment		Suspende	d sediment
Day	Mean dis-	Mean		Mean	Mean		Mean	Mean	
24,		concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge (cfs)	tration	per	charge	tration	per	charge	tration	per
	(CIS)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	2.6	22	0.2	12	5	0.2	32	2	0,2
2	3.3	27	.2	12	4	.1	24	2	
3	4.0	27	.3	11	2	.1	19	3	.2
4	3.8	24	.2	12	ĩ	(n) 'T	16	ž	.ī
5	4.0	21	.2	11	1	(t) (t)	15	2	i
		l			•	(6)	1	_	
6	3.8	18	.2	11	2	.1	14	2	.1
7	3.2	16	.1	11	2	.1	13	2	.1
8	2.5	20	.1	10	2	.1	10	2	.1
9	2.4	23	.1	9.9	2	.1	10	1	(t)
10	2,6	18	.1	8.4	2	<u> </u>	11	1	(t)
			_	_ :	_	]		_	
11	2.6	17	.1	7.1	2	l} ∣	12	1	(t)
12	4.1	13	.1	6.9	2	(t)	12	1 5	(t) .2
13 14	15	27	s1.3	6.1	2 2	11	18 90	18	4.4
15	22 24	20 20	1.2	5.7		ν .		18	5.6
20	24	20	1.3	5.9	10	.2	115	10	3.6
16	19	20	1.0	6.1	5	.1	100	14	3,8
17	16	15	.6	5.9	2	h	83	8	1.8
18	12	îi	.4	5.9	2		126	6	2.0
19	9.9	Ē	.2	6.1	2	11	126	6	2.0
20	8.7	7	. 2	6.4	2	11	98	5	1.3
						(t)			
21	7.9	9	.2	6.1	2	lf "'	66	5	.9
22	6.9	7	.1	6.1	2	11	54	2	.3
23	6.4	6	.1	6.4	2	<b>{</b> {	54	2	.3
24	5.7	6	.1	7.6	2	il i	60	2	.3
25	4.8	7	.1	11	1	μ	52	2	.3
26	5.2	9	.1	19	1	.1	45	2	.2
27	7.4	10	.2	19	2	.1	43	2	.2
28	15	12	.5	29	3	.2	507	410	sa 1, 000
29	24	11	.7	54	4	.6	1,180	900	sa 3, 400
30	17	9	.4	43	2	.2	955		e 1, 500
31	15	7	.3			1	398	61	s71
01	10	_						01	
Total.	280.8		10.9	371.6		2.8	4,358		5,995.7
				371.6		2.8			
Total.	280.8	January	10.9		February		4,358	March	5,995.7
Total .	280.8	January 28	10.9	53	February 6	0.8	4,358 2,710	 March 1,170	5,995.7
1 2	280.8 296 332	 January 28 38	10.9 22 34	53 350	February 6 324	0.8 s353	2,710 1,080 542	March 1,170 262 70	5,995.7 s11,000 s890
Total .	280.8	January 28	10.9	53	February 6	0.8 s 353 60	2,710 1,080 542	March 1,170 262 70	5,995.7 s11,000 s890 102
1	296 332 232	January 28 38 15	10.9 22 34 9.4	53 350 304	February 6 324 73	0.8 s353	2,710 1,080	March 1,170 262	5,995.7 s11,000 s890
1 2 3 4	296 332 232 670 922	January 28 38 15 87 88	10.9 22 34 9.4 s 208 219	53 350 304 272 234	February 6 324 73 29 23	0.8 s 353 60 21 s 20	2,710 1,080 542 1,700 2,640	March 1,170 262 70 1,090 1,320	5,995.7 s11,000 s890 102 s10,800 s12,800
1 2 3 4 5	296 332 232 670 922 1,280	January 28 38 15 87 88	22 34 9.4 \$ 208 219 \$ 624	53 350 304 272 234 3,180	February      6     324     73     29     23     785	0.8 s353 60 21 s 20	2,710 1,080 542 1,700 2,640	 March 1,170 262 70 1,090 1,320	5,995.7 s11,000 s890 102 s10,800 s12,800 s302
1 2 3 4 5	280.8 296 332 232 670 922 1,280 552	January 28 38 15 87 88 170 60	22 34 9.4 \$ 208 219 \$ 624 \$ 97	53 350 304 272 234 3,180 1,590	February  6 324 73 29 23 785 317	0.8 s353 60 21 s20 s7,620 s1,760	2,710 1,080 542 1,700 2,640 890 465	March 1,170 262 70 1,090 1,320 117 55	5,995.7 s11,000 s890 102 s10,800 s12,800 s 302 69
12345	296 332 232 670 922 1,280 552 328	January 28 38 15 87 88 170 60 22	22 34 9,4 8 208 219 8 624 8 97 19	53 350 304 272 234 3, 180 1, 590 608	February  6 324 73 29 23 785 317 69	0.8 s353 60 21 s20 s7,620 s1,760	2,710 1,080 542 1,700 2,640 890 465 320	March 1,170 262 70 1,090 1,320 117 55 36	5,995.7 s11,000 s890 102 s10,800 s12,800 s302 69 31
1	296 332 232 670 922 1,280 552 328 288	 January 28 38 15 87 88 170 60 22 21	10.9  22 34 9.4 s 208 219 s 624 s 97 19 16	53 350 304 272 234 3,180 1,590 608 348	February  6 324 73 29 23 785 317 69 55	0.8 s353 60 21 s20 s7,620 s1,760 113 52	2,710 1,080 542 1,700 2,640 890 465 320 260	March 1,170 262 70 1,090 1,320 117 55 36 32	5,995.7 s11,000 s890 102 s10,800 s12,800 s302 69 31 22
12345	296 332 232 670 922 1,280 552 328	January 28 38 15 87 88 170 60 22	22 34 9,4 8 208 219 8 624 8 97 19	53 350 304 272 234 3, 180 1, 590 608	February  6 324 73 29 23 785 317 69	0.8 s353 60 21 s20 s7,620 s1,760	2,710 1,080 542 1,700 2,640 890 465 320	March 1,170 262 70 1,090 1,320 117 55 36	5,995.7 s11,000 s890 102 s10,800 s12,800 s302 69 31
1	296 332 232 670 922 1,280 552 328 288 253	January 28 38 15 87 88 170 60 22 21 18	10.9  22 34 9.4 \$208 219 \$624 \$97 19 16 12	53 350 304 272 234 3,180 1,590 608 348 505	February	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117	2,710 1,080 1,700 2,640 890 465 320 260 218	March 1,170 262 70 1,090 1,320 117 55 36 32 27	5,995.7  s11,000 s890 102 s10,800 s12,800 s302 69 31 22 16
1	296 8 296 332 232 670 922 1, 280 552 328 288 253 222	January 28 38 15 87 88 170 60 22 21 18	22 34 9.4 \$ 208 219 \$ 624 \$ 97 19 16 12	53 350 304 272 234 3, 180 1, 590 608 348 505	February 6 324 73 29 23 785 317 69 55 86	0.8 s 353 60 21 s 20 s 7, 620 s 1, 760 113 52 117	2,710 1,080 542 1,700 2,640 890 465 320 260 218	March 1,170 262 70 1,090 1,320 117 55 36 32 27	\$11,000 \$890 102 \$10,800 \$12,800 \$2,800 \$302 69 31 22 16
12345	280.8  296 332 232 670 922  1,280 552 328 288 253  222 197	January 28 38 15 87 88 170 60 22 21 18	10.9 22 34 9.4 \$ 208 219 \$ 624 \$ 97 19 16 12	53 350 304 272 234 3,180 1,590 608 348 505	February  6 324 73 29 23 785 317 69 55 86	0.8 s 353 60 21 s 20 s 7, 620 s 1, 760 113 52 117 126 b 35	4,358 2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$312,20 69 31 22 16 8 50 89
Total.  1	296 8 296 332 232 670 922 1, 280 552 328 288 253 222	January 28 38 15 87 88 170 60 22 21 18	22 34 9.4 \$ 208 219 \$ 624 \$ 97 19 16 12	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210	February 6 324 73 29 23 785 317 69 55 86 95 50 30	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17	4,358 2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197	March 1,170 262 70 1,090 1,320 117 55 36 32 27	\$11,000 \$890 102 \$10,800 \$12,800 \$2,800 \$302 69 31 22 16
1	296 8 296 332 232 670 922 1, 280 552 328 288 253 222 197 190	January 28 38 15 87 88 170 60 22 21 18 14 10 9	22 34 9,4 \$ 208 219 \$ 624 \$ 97 19 16 12	53 350 304 272 234 3,180 1,590 608 348 505	February  6 324 73 29 23 785 317 69 55 86	0.8 s 353 60 21 s 20 s 7, 620 s 1, 760 113 52 117 126 b 35	4,358  2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85	\$11,000 \$890 102 \$10,800 \$12,800 \$302 69 31 22 16 \$50 89 45
Total.  1	280.8  296 332 232 670 922 1, 280 552 328 253 288 253 222 197 190 169 166	January 28 38 15 87 88 170 60 22 21 18 14 10 9 11	22 34 9 .4 s 208 219 8 624 s 97 19 18 12 8 .4 5 .3 4 .5 5 .0 4 .5	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143	February  6 324 73 29 23 785 317 69 55 86 95 50 30 18	0.8 s353 60 21 s20 s7,620 s1,760 113 52 117 126 b35 b17 8.3 5.8	4,358  2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45	\$11,000 \$890 102 \$10,800 \$12,800 \$22 16 \$50 89 45 17 24
Total.  1	280.8  296 332 232 670 922  1, 280 552 328 288 253 222 197 190 166	January 28 38 15 87 88 170 60 22 11 18 14 10 9 11 10 10	10.9  22 34 9.4 \$208 219 \$624 \$ \$97 19 16 12  8.4 5.3 4.8 5.0 4.5	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15	0.8 s353 60 21 s20 s7,620 s1,760 113 52 117 126 b35 b17 8.3 5.8 s1,230	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 180	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$12,800 \$12,800 \$12,800 \$12,800 \$13,100 \$13,100 \$13,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,100 \$14,1
Total.  1	280.8  296 332 232 670 922  1, 280 552 328 253 268 253 269 190 169 166 166 166	January 28 38 35 87 88 170 60 22 21 18 14 10 10	10.9  22 34 9.4 s 208 219 s 624 s 97 19 16 12 8.4 5.3 4.6 6.5.0 4.5	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198	0.8 \$353 60 21 \$20 \$7,620 \$1,760 113 52 117 126 b35 b17 8.3 5.8 \$1,230 \$7,94	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197	March 1,170 262 70 1,090 1,320 117 55 38 32 27 55 123 85 40 45	\$11,000 \$890 102 \$10,800 \$12,800 \$31 22 16 \$50 89 45 17 24 75 25
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 288 288 253 222 197 190 166 166 166 166 126	January 28 38 15 87 88 170 60 22 21 18 14 10 91 11 10 10 10 10 10	22 34 9.4 \$208 219 \$624 \$97 19 16 12 8.4 5.3 3.4.6 5.0 4.5 3.9 3.4	53 350 304 272 234 3, 180 1, 590 608 348 505 490 250 210 170 143 1, 020 1, 280 647	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198	0.8 s353 60 21 s20 s7,620 s1,760 113 52 117 126 b35 b17 8.3 5.8 s1,230 s7,94 103	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 40 45	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$302 \$69 \$31 22 16 \$50 \$9 \$45 17 24
Total.  1	280.8  296 332 232 670 922  1, 260 552 328 253 268 253 269 269 169 166 166 146 126 113	January 28 38 38 15 87 88 170 60 22 118 14 10 10 10 10 10 18	10.9  22 23 9.4 9.4 \$208 219 8624 \$97 19 18 12  8.4 5.3 4.6 5.0 4.5 3.9 3.4 2.4	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425	February  6 324 73 29 23 785 317 69 55 86 95 50 18 15 234 198 59 33	0.8 s353 60 21 s20 s7,620 s1,760 113 52 117 126 b35 b17 8.3 5.8 s1,230 s7,820 s1,760	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45 93 45 23 15	\$11,000 \$890 \$10,800 \$10,800 \$12,800 \$302 \$69 \$31 \$22 \$16 \$50 \$89 \$45 \$17 \$24 \$75 \$25 \$11 \$7.1
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 288 288 253 222 197 190 166 166 166 166 126	January 28 38 15 87 88 170 60 22 21 18 14 10 91 11 10 10 10 10 10	22 34 9.4 \$208 219 \$624 \$97 19 16 12 8.4 5.3 3.4.6 5.0 4.5 3.9 3.4	53 350 304 272 234 3, 180 1, 590 608 348 505 490 250 210 170 143 1, 020 1, 280 647	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198	0.8 s353 60 21 s20 s7,620 s1,760 113 52 117 126 b35 b17 8.3 5.8 s1,230 s7,94 103	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 40 45	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$302 \$69 \$31 22 16 \$50 \$9 \$45 17 24
Total.  1	280.8  296 332 232 670 922  1, 280 528 288 253 222 197 190 166 166 146 128 113 110	January 28 38 15 87 170 60 22 1 18 14 10 10 10 10 8 8	10.9  22  34  9.4  \$ 208  219  8 624  8 97  19  18  1.5  4.5  3.9  3.4  2.4	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500	February  6 324 73 29 23 785 317 69 55 86 95 50 18 15 234 198 59 33	0.8 \$353 60 21 \$20 \$7,620 \$1,760 \$1,760 \$117 126 \$55 \$117 8.3 \$5.8 \$1,230 \$7,94 103 38 43	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 40 45 93 45 23 15 18	\$11,000 \$890 \$10,800 \$10,800 \$12,800 \$12,800 \$302 \$69 \$31 \$22 \$16 \$50 \$9 \$45 \$17 \$24 \$75 \$25 \$11 \$7.19
Total.  1	280.8  296 332 232 670 922  1, 260 552 328 253 268 253 269 269 169 166 166 146 126 113	January 28 38 38 15 87 88 170 60 22 118 14 10 10 10 10 10 18	222 34 9.4 \$208 219 \$624 \$97 19 16 12  8.4 5.3 4.6 5.0 4.5 3.9 3.4 2.4 1.5	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500	February 6 324 73 29 23 785 317 69 55 66 95 50 30 18 15 234 198 59 33 32	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 7,94 103 38 43 e 1,200	2,710 1,080 1,080 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45 23 15 18	5,995.7  s11,000 s890 102 s10,800 s12,800 s302 69 31 22 16 s50 89 45 117 24 75 25 11 7.9 sa 6,100
Total.  1	280.8  296 332 232 670 922  1, 280 552 328 288 283 281 197 190 166 166 126 113 110	January 28 38 35 87 88 170 60 22 21 18 14 10 10 10 10 8 8 6 6 6 6 5	10.9  22 34 9.4 \$208 219 8624 \$97 19 16 12  8.4 5.3 4.6 5.0 4.5 3.9 3.4 2.4 1.5 1.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500	February  6 324 73 29 23 785 86 95 50 30 18 15 234 198 199 33 32 640 102	0.8 \$353 60 21 \$20 \$7,620 \$1,760 \$1,760 \$117 126 \$55 \$117 8.3 \$5.8 \$1,230 \$7,94 103 38 43	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660	March 1,170 262 70 1,090 1,320 117 55 38 32 27 55 123 85 40 45 93 45 23 15 18	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$302 69 31 22 16 \$50 89 45 17 24 75 25 11 7.1 7.9 \$a6,100 \$21,800 \$541
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 288 253 289 253 197 190 166 166 166 146 128 113 110 95 103 100 93	January 28 38 15 87 88 170 60 22 21 18 14 10 10 10 10 8 8 6 6 6 6 5 4	10.9  22  34  9.4  \$208  \$624  \$97  19  16  12  8.4  5.3  4.5  3.9  3.4  2.4  2.4  1.5  1.7  1.4	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198 59 33 32 640 102 27	0.8 s353 60 21 s20 s7,620 s1,762 s1,762 117 126 b35 b17 8.3 5.8 s1,230 s794 103 38 43 e1,200 s5,500	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660 1,020	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 123 85 40 45 93 45 23 15 18 900 1,410 186 50	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$12,800 \$302 \$69 \$31 22 16 \$50 \$9 \$45 17 24 75 25 11 7.1 7.9 \$26,100 \$21,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,8
Total.  1	280.8  296 332 232 670 922  1, 280 552 328 288 283 281 197 190 166 166 126 113 110	January 28 38 35 87 88 170 60 22 21 18 14 10 10 10 10 8 8 6 6 6 6 5	10.9  22 34 9.4 \$208 219 8624 \$97 19 16 12  8.4 5.3 4.6 5.0 4.5 3.9 3.4 2.4 1.5 1.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500	February  6 324 73 29 23 785 86 95 50 30 18 15 234 198 199 33 32 640 102	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 794 103 38 43 e 1,200 sa 5,500 s 289	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660	March 1,170 262 70 1,090 1,320 117 55 38 32 27 55 123 85 40 45 93 45 23 15 18	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$302 69 31 22 16 \$50 89 45 17 24 75 25 11 7.1 7.9 \$a6,100 \$21,800 \$541
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 288 253 289 197 190 166 166 166 166 166 167 103 100 93 88	January 28 38 15 87 88 170 60 22 21 18 14 10 9 11 10 10 10 10 8 8 6 6 5 4 3	22 34 9.4 \$208 219 \$624 \$97 19 16 12 8.4 5.3 4.6 5.0 0.4.5 4.5 3.9 3.4 2.4 2.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February 6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198 59 33 2 640 102 27 12	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 794 103 38 43 e 1,200 s 289 35 11	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660 1,020	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 123 85 40 45 93 45 23 15 18 900 1, 410 166 50 34	\$11,000 \$890 102 \$10,800 \$12,800 \$12,800 \$12,800 \$302 69 31 22 16 \$50 89 45 117 24 75 25 11 7.1 7.9 \$26,100 \$21,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800 \$31,800
Total.  1	280.8  296 332 232 670 922  1, 280 552 328 289 253 222 197 190 169 166 146 126 113 110 95 100 93 86	January 28 38 15 87 88 15 87 88 170 60 22 21 18 14 10 10 10 10 10 10 8 8 6 6 6 5 4 3 3 3	10.9  22  34  9.4  \$208  \$624  \$97  19  16  12  8.4  5.3  4.5  3.9  3.4  2.4  2.4  1.5  1.7  1.4	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 373 29 23 785 317 69 55 86 95 50 18 15 234 198 59 33 32 640 102 27 12	0.8 \$353 60 21 \$20 \$7,620 \$1,762 \$1,763 113 52 117 126 \$35 \$51,783 \$5,8 \$1,230 \$7,94 103 38 43 e1,200 \$2,500 \$2,500 \$3,500 \$3,794 103 103 103 103 103 103 103 103	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 204 184 175 163 2,150 4,660 1,020 474 327 315	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45 93 45 23 15 18 900 1,410 166 50 34	\$11,000 \$890 \$10,800 \$10,800 \$12,800 \$12,800 \$12,800 \$31 \$22 \$16 \$50 \$9 \$17 \$24 \$75 \$25 \$17 \$7,9 \$86,100 \$21,800 \$541 \$64 \$30 \$541 \$64 \$64 \$64 \$65 \$65 \$65 \$65 \$65 \$65 \$65 \$65
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 288 288 253 222 197 190 166 166 146 128 113 110 95 103 93 86	January 28 38 15 87 88 170 60 22 21 18 14 10 9 11 10 10 10 10 8 8 6 6 5 4 3	22 34 9.4 \$208 219 \$624 \$97 19 16 12 8.4 5.3 4.6 5.0 0.4.5 4.5 3.9 3.4 2.4 2.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 73 29 23 785 317 69 55 86 95 50 30 18 15 234 198 33 22 640 27 12 19 1, 650	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 7,94 103 38 43 e 1,200 s 5,500 s 289 35 117 s 17 s 17 s 17 s 18 s 18 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660 1,020 4,74 327 315 237	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 123 85 40 45 93 45 23 15 18 900 1, 410 166 50 34	\$11,000 \$890 102 \$10,800 \$12,800 \$22 16 \$50 89 45 17 24 75 25 11 7.9 \$86,100 \$21,800 \$541 64 30 \$520 \$14
Total.  1	280.8  296 332 232 670 922  1, 280 552 288 253 288 253 222 197 190 166 166 146 126 113 110 95 103 100 93 86	January 28 38 15 87 88 15 60 22 21 18 14 10 9 11 10 10 10 10 8 6 6 6 5 5 4 3 3 3	22 34 9.4 \$208 219 \$624 \$97 19 18 12 8.4 5.3 3.4.8 5.0 4.5 3.9 3.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 323 29 23 785 86 95 50 30 18 15 234 198 59 33 32 640 102 7 12 1,650 180	0.8 \$353 60 21 \$20 \$7,620 \$1,762 \$1,763 113 52 117 126 \$35 \$51,783 \$5,8 \$1,230 \$7,94 103 38 43 e1,200 \$2,500 \$2,500 \$3,500 \$3,794 103 103 103 103 103 103 103 103	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 180 204 184 175 163 2,150 4,660 1,020 474 327 315 237	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45 93 45 23 15 18 900 1,410 166 50 34	\$11,000 \$890 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$
Total.  1	280.8  296 332 232 232 670 922  1, 280 552 328 288 283 281 197 199 166 166 126 113 110 95 100 93 86 70 555 50 49	January 28 38 15 87 88 15 87 88 170 60 22 21 18 14 10 10 10 10 10 10 8 8 6 6 6 5 4 3 3 3	22 34 9.4 \$208 219 \$624 \$97 19 16 12 8.4 5.3 4.6 5.0 0.4.5 4.5 3.9 3.4 2.4 2.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 73 29 23 785 317 69 55 86 95 50 18 15 234 198 59 30 23 64 102 27 11 1,650 180	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 7,94 103 38 43 e 1,200 s 5,500 s 289 35 117 s 17 s 17 s 17 s 18 s 18 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660 1,020 474 327 315 230 269	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 40 45 93 45 23 15 18 900 1, 410 166 50 34	\$11,000 \$890 102 \$10,800 \$12,800 \$22 10,800 \$312 22 16 \$50 89 45 117 24 75 25 11 7.9 \$26,100 \$21,800 \$541 64 30 \$50 14 16 23
Total.  1	280.8  296 332 232 670 922  1, 280 552 288 253 288 253 222 197 190 166 166 146 126 113 110 95 103 100 93 86	January 28 38 15 87 88 15 60 22 21 18 14 10 9 11 10 10 10 10 8 6 6 6 5 5 4 3 3 3	22 34 9.4 \$208 219 \$624 \$97 19 18 12 8.4 5.3 3.4.8 5.0 4.5 3.9 3.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 323 29 23 785 86 95 50 30 18 15 234 198 59 33 32 640 102 7 12 1,650 180	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 7,94 103 38 43 e 1,200 s 5,500 s 289 35 117 s 17 s 17 s 17 s 18 s 18 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 180 204 184 175 163 2,150 4,660 1,020 474 327 315 237	March 1,170 262 70 1,090 1,320 117 55 36 32 27 55 123 85 40 45 93 45 23 15 18 900 1,410 166 50 34	\$11,000 \$890 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$10,800 \$
Total.  1	280.8  296 332 232 670 922  1, 280 552 288 253 288 253 197 190 166 166 146 126 113 110 95 103 100 93 86 70 55 50 49	January 28 38 38 15 87 88 170 60 22 221 18 140 19 11 10 10 10 8 8 6 6 6 6 5 4 3 3 3	22 34 9.4 \$208 219 \$624 \$97 19 18 12 8.4 5.3 3.4.8 5.0 4.5 3.9 3.4 2.4 2.4 1.5 1.7 1.4 1.0 b.7	53 350 304 272 234 3,180 1,590 608 348 505 490 250 210 170 143 1,020 1,280 647 425 500 1,600 2,890 955 485 332	February  6 324 73 29 23 785 317 69 55 86 95 50 18 15 234 198 59 30 23 64 102 27 11 1,650 180	0.8 s 353 60 21 s 20 s 7,620 s 1,760 113 52 117 126 b 35 b 17 8.3 5.8 s 1,230 s 7,94 103 38 43 e 1,200 s 5,500 s 289 35 117 s 17 s 17 s 17 s 18 s 18 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s 19 s	2,710 1,080 542 1,700 2,640 890 465 320 260 218 272 268 197 160 197 300 204 184 175 163 2,150 4,660 1,020 474 327 315 237 230 269 240	March 1, 170 262 70 1, 090 1, 320 117 55 36 32 27 55 123 85 40 45 93 45 23 15 18 900 1, 410 166 50 34	\$11,000 \$890 102 \$10,800 \$12,800 \$22 10,800 \$312 22 16 \$50 89 45 117 24 75 25 11 7.9 \$26,100 \$21,800 \$541 64 30 \$50 14 16 23

e Estimated. s Computed by subdividing day. t Less than 0.05 ton.

a Computed from partly estimated concentration graph. b Computed from estimated concentration graph.

### OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

### LITTLE MIAMI RIVER BASIN -- Continued

### TODD FORK NEAR ROACHESTER, OHIO -- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April		ater year Oc	Мау		1	June	
			d sediment	<b> </b>		d sediment	<b> </b>		d sediment
Day	Mean	Mean		Mean	Mean		Mean	Mean	
Day	dis- charge	concen-	Tons	dis- charge	concen-	Tons	dis- charge	concen-	Tons
	(cfs)	tration	per day	(cfs)	tration	per day	(cfs)	tration	per day
		(ppm)			(ppm)		ļ	(prm)	
1	171	17	7.8	75	6	1.2	16	10	0.4
2 3	154 138	11 12	4.6 4.5	68 59	5 4	b.9 .6	12 10	10 11	b.3 .3
4	117	13	4.1	52	3	.4	8.8	14	.3
5	102	14	3.8	47	4	.5	8.1	12	.3
6	105	11	١ ا	37	3		7.9		
7	114	8	3.1 2.5	37	3	.3	9.2	15 14	.3 .3
8	91	š	2.0	33	3	.3	13.2	15	.5
9	80	9	1.9	32	3	.2	32	20	1.7
10	73	10	2.0	29	5	.4	34	13	1.2
11	80	6	1.3	26	5	.4	31	11	.9
12	181	25	в 15	27	8	.6	30	7	.6
13	181	30	b15	31	11	.9	27	7	.5
14	126	18	6.1	54	13	1.9	21	7	.4
15	105	12	3.4	49	13,	1.7	17	7	.3
16	88	9	2.1	32	12	1.0	14	8	. 3
17	78	10	2.1	23	12	.7	12	8	.2
18 19	66	9	1.6	21	15	.8	9.8	7	b.2
20	68 188	10 29	1.8 15	18 16	14 12	b.7 .5	8.1 7.2	8 8	.2 .2
	'	<b>\</b>	"		14		1	- 1	
21	132	17	6.0	14	16	.6	6.4	10	.2
22 23	108	15	4.4	16	19	.8	7.7	15	.3 .2
24	88 300	5 38	1.2 s50	19 22	20 20	1.0 1.2	7.0 5.7	12 9	.2 .1
25	389	68	71	26	20	1.4	9.7	24	.6
0.0				1			1		
26 27	251 178	28 10	19 4.8	26 22	20 19	1.4 1.1	11 13	35 25	1.0 .9
28	138	17	2.6	19	16	1.1	9.8	25	b.7
29	111	7	2.1	22	15	b.9	7.4	22	.4
30	91	6	b1	32	12	1.0	5.1	32	.4
31									
	4 092		261.8	1 004	12	.8 25.3	410.9		14.2
Total .	4,092		261.8	1,004		25.3	410.9		14.2
Total.		 July		1,004	 August	25.3		 September	14.2
1	4.3	July 35	0.4	1,004	August	25.3 3.5	1.1	Septe mber	14.2
Total.	4.3 3.8 3.4	July 35 24 32		1,004 54 25 16	 August	25.3 3.5 1.1 .5	1.1 .9 .8	September  15 15 11	14.2
1 2 4	4.3 3.8 3.4 4.0	July 35 24 32 30	0.4 .2 .3 b.3	1,004 54 25 16 12	August 24 17 11 14	3.5 1.1 .5	1.1 .9 .8	Septe nber  15 15 11 5	14.2
1	4.3 3.8 3.4	July 35 24 32	0.4 .2 .3	1,004 54 25 16	August 24 17 11	25.3 3.5 1.1 .5	1.1 .9 .8	September  15 15 11	14.2
1 2 4	4.3 3.8 3.4 4.0	July 35 24 32 30	0.4 .2 .3 b.3 .6	1,004 54 25 16 12 9.0	August  24 17 11 14 14	3.5 1.1 .5 .4	1.1 .9 .8 .8	September  15 15 11 5 5	
1 2 3 4 5	4.3 3.8 3.4 4.0 7.6 7.2	July 35 24 32 30 30 22 33	0.4 .2 .3 b.3 .6	1,004 54 25 16 12 9.0 7.2 5.9	August  24 17 11 14 14 13	25.3 3.5 1.1 .5 .4 .3	1.1 .9 .8 .8	Septe nber  15 15 11 5 5 5 5	14.2
1 2 3 5 6 7	4.3 3.8 3.4 4.0 7.6 7.2 89	July 35 24 32 30 30 30 22 33 35	0.4 .2 .3 b.3 .6	1,004 54 25 16 12 9.0 7.2 5.9 8.8	August  24 17 11 14 14 13 13 15	25.3 3.5 1.1 .5 .4 .3 .2 .2	1.1 .9 .8 .8 .8	September  15 15 15 11 5 5 7	
1	4.3 3.8 3.4 4.0 7.6 7.2 89 78	July 35 24 32 30 30 22 33	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9	August  24 17 11 14 14 13 13 15 15	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4	1.1 .9 .8 .8 .8 .8	Septe mber  15 15 15 11 5 5 7 8	
12345	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266	July 35 24 32 30 30 22 33 35	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7	August  24 17 11 14 14 13 13 15 15 22	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4 .2	1.1 .9 .8 .8 .8 .8	 Septe mber 15 15 11 5 5 5 7 8	
1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266	July 35 24 32 30 30 30 22 33 35 420	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7	August  24 17 11 14 14 13 13 15 15 22	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4 .2	1.1 .9 .8 .8 .8 .8 .7 .7	September 15 15 11 5 5 7 8 8 8	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266	July 35 24 32 30 30 30 22 33 35 420 185	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7	August  24 17 11 14 14 15 15 15 15 22 127 62	25.3 3.5 1.1 .5 4 .3 .2 .2 .4 .2 .4	1.1 .9 .8 .8 .8 .8 .7 .7	Septe mber  15 15 15 11 17 5 5 7 8 8 8 25	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266	July 35 24 32 30 30 30 22 23 33 35 420 185 72 30	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7	August  24 17 11 14 14 13 15 15 22 127 62 27 20	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4 .2	1.1 .9 .8 .8 .8 .8 .8 .7 .7	Septe ober  15 15 15 11 5 5 7 8 8 8 8 25 22 7	(t)
12345	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266 117 49	July 35 24 32 30 30 30 22 33 35 420 185 72	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4	August 24 17 11 14 14 13 13 15 15 22 127 62 27	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4	1.1 .9 .8 .8 .8 .8 .8 .7 .7	Septe mber  15 15 15 11 5 5 5 7 8 8 8 25 22 22	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266 117 49 24	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4	August  24 17 11 14 14 13 13 15 15 22 127 62 27 20 22	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4 .2 .4 .2 .4 .2 .4 .2 .2 .4 .2 .2 .4 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	1.1 .9 .8 .8 .8 .8 .7 .7 1.3 20 16 8.5 4.1	Septe mber  15 15 15 11 11 5 5 7 8 8 8 25 22 7 5	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11	July 35 24 32 30 30 30 22 23 33 35 420 185 72 30	0.4 .2 .3 b.3 .6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9	August  24 17 11 14 14 13 15 15 22 127 62 27 20	25.3 3.5 1.1 .5 .4 .3 .2 .2 .4 .4 10 2.7 .6 b.3	1.1 .9 .8 .8 .8 .8 .8 .7 .7	Septe ober  15 15 15 11 5 5 7 8 8 8 8 25 22 7	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 89 78 156 266 117 49 24 14 11	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25	0.4 .2 .3 b.3 b.3 c.6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1,7 b.6 .5	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8	August  24 17 11 14 13 13 15 52 22 127 62 27 20 22 23 20 25	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4 .2 .4 .2 .4 .2 .4 .2 .2 .4 .2 .2 .4 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 .7 .1.3 20 16 .8.5 4.1 2.5 1.8	Septe nber  15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2	(t)
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 286 117 49 24 14 11 8.8 7.4 23	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 158	0.4 .2 .3 .3 .6 .4 s.8.8 7.4 e 700 e 800 133 24 4.7 1.1 .7 b.6 .5 e 10	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 4.9 1.8	August  24 17 11 14 13 13 15 22 127 62 27 20 22 23 20 25 29	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4 .2 .4 .2 .1 .1 .1	1.1 .9 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 1.8 1.5	Septe mber  15 15 15 15 5 5 7 8 8 8 25 22 7 5 6 4 2 2 2	(t)
Total.  1	4.3 3.8 3.4 4.0 7.6 89 78 156 266 117 49 24 14 11	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25	0.4 .2 .3 b.3 b.3 c.6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1,7 b.6 .5	1,004 54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8	August  24 17 11 14 13 13 15 52 22 127 62 27 20 22 23 20 25	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .10 2.7 .6 b.3 .2 .1 b.1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 .7 .1.3 20 16 .8.5 4.1 2.5 1.8	Septe nber  15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2	(t)
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4	July 35 24 32 30 30 30 22 33 35 420 185 72 72 72 72 72 730 25 158 66	0.4 .2 .3 b.3 b.6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.7 b.6 .5 e10 6.0	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8 1.5 1.2	August  24 17 11 14 13 13 15 22 127 62 27 20 22 23 20 25 29	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4 .2 .4 .10 2.7 .6 b.3 .2 .2 .1 b.1 .1 b.1	1.1 .9 .8 .8 .8 .8 .7 .7 .1.3 20 .8 .5 4.1 2.5 1.5 1.2	Septe mber  15 15 15 11 15 5 5 7 8 8 8 25 22 7 5 6 4 2 2 7 8 8	(t)  1.4 1.0 2 .1
Total.  1	4.3 3.8 3.4 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 25 35 30	0.4 .2 .3 b.3 b.3 c.6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1 7 b.6 .5 e10 6.0 1.3	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8 1.5 1.2	August  24 17 11 14 13 13 15 52 127 20 22 23 20 25 29 26 20 31	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 10 2.7 .6 b.3 .2 .2 .1 .1 b.1 .1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 2.5 1.8 1.5 1.2 1.0	Septe mber  15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 4 2 2 7 8 43	(t)  1.4 1.0 2.1 1.1
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 8.3 6.6	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 158 66 35 30 25	0.4 .2 .3 .3 .6 .4 s.8.8 7.4 e 700 133 24 4.7 1.1 .7 b.5 e10 .6 .5 e10 .6 .7	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 6.2.1 1.8 1.5 1.2	August  24 17 11 14 13 13 15 15 22 127 62 27 20 22 23 20 25 29 26 20 31 32	25.3  3.5 1.1 1.5 4.4 .3 .2 .2 4.2 .4 .2 .4 .2 .1 .1 b.1 .1 b.1 .2 s4.0	1.1 .9 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 1.5 1.5 1.2 1.0	Septe mber  15 15 15 15 5 5 7 8 8 8 25 22 7 5 6 4 2 2 7 8 43 169	(t)  1.4 1.0 2. 11 s24
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 11 11 8.8 7.4 23 14 7.4 6.6 8.3 6.6	July 35 24 32 30 30 30 22 23 33 35 420 185 72 30 25 25 25 25 30 30 30 22 20	0.4 .2 .3 b.3 b.3 c.6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1 .7 b.6 .5 e10 6.0 1.3	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8 1.5 1.2 1.9 30	August  24 17 11 14 13 13 15 15 22 127 20 22 23 20 25 29 26 20 31 32 40	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .10 0 2.7 .6 b.3 .2 .1 b.1 b.1 c.1 b.1 c.2 s4.0 3.1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 2.5 1.8 1.5 1.2 1.0	Septe nber  15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2 2 2 7 7 8 8 43 169	(t)  1.4 1.0 2.1  (t)  11 824 14
Total.  1	4.3 3.8 4.0 7.6 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 8.3 6.0 7.9	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 25 25 25 25 25 25 25 25 25 25	0.4 2.3 b.3 b.3 b.3 c.6 .4 s8.8 7.4 e 700 e 800 133 24 4.7 1.1 .7 b.6 6.0 1.3 .5 e10 6.0 1.3 .5 .5 e10 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8 1.5 1.2 1.9 30 29 9.8	August  24 17 11 14 13 13 15 15 22 127 20 22 23 20 25 29 26 20 31 32 20 31 32 25	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .1 .2 .4 .1 .6 b.3 .2 .2 .1 .1 b.1 b.1 c.2 s4.0 3.1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 .7 .7 .1.3 20 16 .8.5 1.5 1.2 1.5 1.2 1.0 1.4 98 60 23	Septe nber  15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2 2 7 8 8 43 169 199 185	(t)  1.4 1.0 2.1  (t)  11 824 11
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 11 8.8 7.4 23 4 7.4 6.6 6.0 7.9	July  35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 158 66 35 30 25 21	0.4 .2 .3 b.3 b.3 6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1 .7 .7 b.6 .5 e10 6.0 1.3 .6 b.7 4.4	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 9.3.4 2.6 2.1 1.8 1.5 1.2 1.2 2.9 30 9.8	August  24 17 11 14 14 13 13 15 22 127 62 27 20 22 23 20 25 29 26 20 21 32 20 25 17	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .10 2.7 .6 b.3 .2 .1 b.1 .1 .1 b.1 c.1 s.4 .0 3.1 7 b.2	1.1 .9 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 2.5 1.8 1.5 2.1 1.0 1.4 98 60 27 23	Septe mber  15 15 15 5 5 5 7 8 8 8 25 27 7 8 8 43 169 199 185	(t)  1.4 1.0 2.2 11 (t)  (t)  11 8 24 14 11 3.2
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 8.3 6.6 6.0 7.9	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 25 25 25 25 25 25 25 25 25 25	0.4 2.3 5.3 5.3 6.4 88.8 7.4 e 700 e 800 133 24 4.7 1.1 7 5.5 e 10 6.0 1.3 6.5 1.4 4.7 1.4 4.7	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.8 1.5 1.2 1.9 30 29 9.8	August  24 17 11 14 13 13 15 15 22 127 62 27 20 22 23 20 25 29 26 20 31 240 25	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .2 .4 .10 2.7 .6 b.3 .2 .2 .1 .1 .1 b.1 .1 b.1 .2 s4.0 3.1 .7	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 1.5 1.5 1.5 1.2 1.0 2.7 2.3	Septe mber  15 15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2 2 2 7 8 43 169 199 185 85 60	(t)  1.4 1.0 .2 .1  (t)  11 824 14 11 3.2 1.8
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 11 8.8 7.4 23 4 7.4 6.6 6.0 7.9	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 25 25 25 25 25 25 25 25 25 25	0.4 22 33 b.3 6.4 s8.8 7.4 e700 e800 133 24 4.7 1.1 7 b.6 .5 e10 6.0 1.3 .6 6.7	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 4.9 3.4 2.6 2.1 1.5 1.2 1.2 2.9 30 29 9.8	August  24 17 11 14 14 13 13 15 22 127 62 27 20 22 23 20 25 29 26 20 21 32 20 25 17	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .10 2.7 .6 b.3 .2 .1 b.1 .1 .1 c.1 c.2 s4.0 3.1 .7	1.1 .9 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 2.5 1.8 1.5 2.1 1.0 1.4 98 60 27 23	Septe mber  15 15 15 15 5 5 7 8 8 8 25 7 8 8 43 169 199 185	(t)  1.4 1.0 2.2 11 (t)  (t)  11 8 24 14 11 3.2
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 8.3 6.0 7.9	July 35 24 32 30 30 30 22 23 33 35 420 185 72 30 25 25 25 25 25 25 25 25 25 25 25 25 25	0.4 .2 .3 .6 .4 s.8.8 7.4 e 800 133 24 4.7 1.1 .7 b.6 .5 e10 6.0 1.3 .6 b.7 .4 .4 .4 e1,304	1,004  54 25 16 12 9.0 7.2 5.9 8.8 8.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.5 1.2 1.9 30 29 9.8 5.2 3.5 2.6 2.0 1.6	August  24 17 11 14 13 13 15 55 22 127 20 22 23 20 25 29 26 20 21 27 20 25 29 26 20 31 32 20 25 29 26 20 31 32 31 32 32 32 32 32 32 32 32 32 32 32 32 32	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .1 0 2.7 .6 b.3 .2 .1 b.1 .1 .1 c.1 .2 s4.0 3.1 .7 b.2 b.2 b.2 .1 b.1 b.1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 .7 .1.3 20 .8 .5 4.1 2.5 1.8 1.5 1.2 1.0 1.4 98 60 27 23	Septe mber  15 15 15 5 5 5 7 8 8 8 25 22 7 7 8 44 4 2 2 7 8 8 43 169 199 185	(t)  1.4 1.0 2.1  (t)  11 8.24 14 11 3.2 1.8 5.8
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 6.3 6.0 7.9 8.3 7.2	July 35 24 30 30 30 22 33 35 420 185 72 30 25 25 25 25 158 66 35 20 21 19 20 20 396 531	0.4 .2 .3 b.3 b.3 6. .4 s8.8 e700 e800 133 24 4.7 1.1 .7 b.6 .5 e10 6.0 1.3 .6 b.7 4.3 .4 .4 .4 .5 .5 .5 .5 .5 .6 .6 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	1,004  54 25 16 12 9.0 7.2 5.9 8.8 5.9 7.7 30 16 8.4 4.9 9.3 4.1 1.8 1.5 1.2 1.2 2.2 2.9 30 29 9.8 5.2 3.5 2.6 2.0 1.6 1.3	August  24 17 11 14 14 13 13 15 22 127 62 27 20 22 23 20 25 29 26 20 17 16 16 16 15 15	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .2 .4 .10 2.7 .6 b.3 .2 .1 b.1 b.1 b.1 b.1 b.1	1.1 .9 .8 .8 .8 .8 .8 .7 .7 .7 .1 .3 .20 .8 .5 .4 .1 .1 .2 .1 .0 .2 .1 .1 .2 .1 .1 .2 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	Septe mber  15 15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2 2 2 7 5 8 43 169 199 185 85 60 60 57	(t)  1.4 1.0 2.2 11 824 14 11 3.2 1.8 5.8 5.9 77
Total.  1	4.3 3.8 4.0 7.6 7.2 89 78 156 266 117 49 24 14 11 8.8 7.4 23 14 7.4 6.6 8.3 6.0 7.9	July 35 24 32 30 30 30 22 33 35 420 185 72 30 25 25 25 25 158 66 35 30 25 20 11 19 20 396 54 30	0.4 .2 .3 .6 .6 .4 s8.8 7.4 e700 e800 133 24 4.7 1.1 .7 b.6 .5 e10 6.0 1.3 .4 .5 e10 .5 e10 1.3 .4 .5 e10 .5 e10 .5 .5 e10 .5 .5 .6 .6 .7 .4 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	1,004  54 25 16 12 9.0 7.2 5.9 8.8 8.9 7.7 30 16 8.4 4.9 3.4 2.6 2.1 1.5 1.2 1.9 30 29 9.8 5.2 3.5 2.6 2.0 1.6	August  24 17 11 14 13 13 15 55 22 127 20 22 23 20 25 29 26 20 21 27 20 25 29 26 20 31 32 20 25 29 26 20 31 32 31 32 32 32 32 32 32 32 32 32 32 32 32 32	25.3  3.5 1.1 .5 .4 .3 .2 .2 .4 .1 0 2.7 .6 b.3 .2 .1 b.1 .1 .1 c.1 .2 s4.0 3.1 .7 b.2 b.2 b.2 .1 b.1 b.1	1.1 .9 .8 .8 .8 .8 .7 .7 .7 1.3 20 16 8.5 4.1 1.5 1.5 1.2 1.0 27 23	Septe mber  15 15 15 15 5 5 5 7 8 8 8 25 22 7 5 6 4 2 2 2 7 5 8 43 169 199 185 85 60 60 57	(t)  1.4 1.0 2.2 1 1 s24 14 11 3.2 1.8 5.8 5.9

Total load for year (tons).....

113,411.6

timated. t Less than

e Estimated. s Computed by subdividing day.

t Less than 0.05 ton.
b Computed from estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

TODD FORK NEAR ROACHESTER, OHIO--Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decantation; P. pipette; S. sieve; N. in native water; W. in distilled water; C. chemically dispersed; M. mechanically dispersed)

	Methods of analysis		BSWCM	BSWCM	BSWCM	BSNM	BSWCM	DOWN		BSNW	BSWCM	BSWCM	BSWCM		BSNM	BWCM	BSWCM
		1.000														_	
		0.500	100	96	97	66	92			;	:	!	86		96	:	:
		0.350							_								
	Percent finer than indicated size, in millimeters	0.250	66	98	96	86	94	2	3 5	3	8	;	92		85	:	:
	ize, in mi	0.125	66	83	95	96	92	8	8 6	3	66	100	85		68	!	:
	ndicated s	0.062	26	80	93	94	91	ě	8 8	).	86	66	06		98	1	100
ediment	ner than 1	0.031	16	12	68	83	82	5	5 6	33	82	83	71		89	;	86
Suspended sediment	Percent fü	0.016	16	26	74	73	16	Q.	2 :	20	8	88	99		9	100	85
ng.	1	0.008	99	4	28	54	61	7	5	43	20	18	26		48	66	84
		0.004	20	28	48	39	23	ž	;	52	62	20	47		36	93	68
		0.002	42	21	4	28	43	Ę	7,	16	21	28	41		56	99	53
	Concentration of suspension	analyzed (ppm)	1,580	1,260	2,140	1,970	104	0 640	3, 040	3,690	941	1.410	2,040		1,930	993	1,240
	Concentration	or sampre (ppm)	1,100	1, 150	1,320	1,320	836	6	2, 140	2,740	920	525	1,460		1,460	571	419
Water	tem- per-	ature (°F)							_								
	Discharge (cfs)		1,350	4,390	4, 170	4, 170	3,050	6	7,010	4,610	2,950	1,600	6,480		6, 480	181	1,900
11	Time		2:30 p.m.	4:45 p.m.	12:20 p.m.	12:20 p.m.	5:00 p.m.	10.95	10.55 a. III.	10:35 a.m.	5:45 p.m.	4:20 p.m.	7:20 a.m.	_	7:20 a.m.	7:45 p.m.	3:35 a.m.
6	Date of collection		Dec. 29, 1954	Feb. 6, 1955		Feb. 27		Most	Mai I	Mar. 1	Mar. 1	Mar. 21	Mar. 22		Mar. 22	July 10	July 29

### LICKING RIVER BASIN

LICKING RIVER AT FARMERS, KY.

LOCATION. -- Temperature recorder at gaging station at bridge on U. S. Highway 60, 300 feet upstream from Chesapeake & Ohio Rallway bridge, three-guariers of a mile west of Farmers, Rowan County, and 1.1 miles upstream from Triplett Creek.

DRAINAGE AREA. --826 square miles. RECORDS AVAILABLE. --Chemical analyses:

RECORDS AVAILABLE.—Chantel analyses: September 1949 to August 1950.

Water temperatures: October 1949 to September 1957.

Water temperatures: October 1949 to September 1957.

WATERWISS, 1954-55.—"Water temperatures: Maximum, 92"F Aug. 3-7; minimum, 35"F on several days during December and February.

EXTREMES, 1954-55.—"Water temperatures: Maximum, 92"F July 191951; minimum, 195"F optic on several days during winter months during most years.

EXEMANES.—"Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

EXEMANES.—"WSP 1350: Revised water temperatures for water year 1953-54 are given herewith: Dec. 16, minimum, 38"F; May 5, minimum, 56"F.

Temperature (°F) of water, water year October 1954 to September 1955 der with temperature attachment continuous eity alcohol-actuated them ė

1	1																																1	ı
	mber	min	52	2	17	72	72	71	7	E	F	5	73	2	67	88	89	69	69	69	8	69	20	7	2	=	0; 0;	69	89	69	89	2	:	20
	Septembe	max	75	22	2	75	75	75	74	74	92	9.	75	E	2	72	71	73	2	72	2	72	72	72	27	72	E;	70	2	7	11	20	:	52
ĺ	ust	min	8	8	82	8	83	88	8	81	4	43	48	77	92	2	92	92	16	82	48	8	42	62	28	-	74	74	74	75	92	44	75	22
	August	max	82	83	8	84	84	84	25	8	8	8	4	48	28	11	77	82	62	8	8	<b>∞</b>	8	62	62	43	œ.	92	18	92	77	11	E	8
	July	min	73	74	16	92	17	62	82	92	5	2	2	5	75	77	48	77	11	48	78	82	42	82	62	æ	£.	62	8	2	82	18	92	1
	Z	max	92	77	42	42	79	42	79	42	16	74	73	72	77	18	28	18	62	62	62	79	42	8	æ	8	ě	81	81	81	42	8	æ	62
Ì	June	min	65	99	67	67	88	11	69	99	65	65	2	64	63	62	63	65	99	88	17	2	72	74	74	<u>د</u>	22	11	69	69	69	12	:	88
/ude.	Ę	max	69	69	20	20	72	72	72	69	99	65	65	25	64	63	65	67	69	11	1.	£	75	77	77	22	2	72	11	2	72	74	:	2
ermogr	ty.	mtm	57	28	9	61	63	63	8	2	63	63	64	63	83	28	29	29	19	62	82	8	2	65	99	67	67	89	69	2	7.1	8	92	25
uated th	May	max	29	9	62	8	65	65	65	99	99	65	65	5	63	63	29	61	£	63	63	\$	65	99	67	9	6	20	12	73	22	72	88	65
hol-act	11.	min	45	48	48	21	25	53	72	25	25	53	22	26	28	8	22	28	88	9	8	62	63	62	62	6	23	24	22	24	24	22	:	99
hyl alcc	April	max	48	48	21	22	53	24	25	¥	25	22	26	28	28	28	28	28	9	8	62	8	63	63	62	6	5	28	57	22	22	28	:	57
continuous ethyl alcohol-actuated thermograph/	ch	nin	46	48	48	49	48	48	48	4	46	46	46	49	25	25	25	22	21	20	48	47	47	49	48	48	8	47	44	43	42	42	43	48
	March	max	48	49	49	49	49	20	2	48	47	49	49	25	25	25	25	25	22	51	20	48	49	20	20	48	48	48	47	44	43	43	45	49
chment	ary	nin	37	37	37	37	37	37	38	4	40	40	40	38	88	32	32	36	36	37	37	88	40	42	43	43	43	42	42	43	i	;	;	39
ıre atta	February	max	37	37	37	37	37	39	41	41	41	40	40	40	38	38	38	38	3	37	38	40	42	43	43	43	43	43	43	46	;	;		40
"Recorder with temperature attachment,	ary	튑	44	44	44	44	45	47	49	47	45	43	42	4	40	39	39	30	8	38	37	37	36	36	3	33	37	37	37	37	37	37	37	40
with te	January	max	45	44	44	45	47	49	48	48	47	45	43	42	41	40	38	38	8	38	38	37	37	37	37	37	37	37	37	37	38	37	37	41
corder	oper	min	42	42	42	40	40	39	37	32	35	35	35	36	8	38	38	80	8	9	41	42	40	38	38	38	88	38	38	38	40	43	45	39
<u> </u>	December	max	42	42	42	42	41	. 04	39	37	35	<b>8</b>	36	36	36	38	39	30	\$	41	43	43	42	40	39	8	88	38	38	40	43	45	45	40
	nber	諨	49	47	45	#	44	44	44	44	44	44	44	44	45	45	46	46	4	49	20	8	20	23	48	49	46	46	44	44	43	42	{	46
	November	max	20	49	47	45	44	4	44	44	44	#	44	45	45	46	48	47	64	20	20	20	20	20	20	48	48	46	48	44	44	43	ţ	47
	ber	mim	69	2	20	2	1	69	4	62	62	49	65	99	89	88	2	90	82	28	28	22	Z	23	23	23	23	54	55	26	22	25	22	61
	Octo	max	65	5	7.	E	75	72	69	2	2	65	99	89	8	88	89	2	8	28	8	8	22	¥	72	75	75	22			26	22	25	62
		Day	1	2	3	4	2	8	T	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30.	31	Average

### LICKING RIVER BASIN -- Continued

## LICKING RIVER AT MCKINNEYSBURG, KY

gaging station at highway bridge at McKinneysburg, Pendleton County, 6.5 miles southeast of Falmouth, 9.0 miles upstream from Blanket Creek,

and 12.8 miles upstream from South Fork.

MARAGE ARRA, --2, 280 square miles, approximately.

RECORDS AVAILABLE. --Chemical analyses: October 1952 to September 1955.

Water temperatures: October 1952 to September 1955.

Sediment records: October 1952 to September 1955.

EXTREMES, 1934-55.—Dissolved solids: Maximum, 177 ppm July 15-26; minimum, 71 ppm Mar. 8-12.

Rarchess: Maximum, 130 ppm Nov. 22-30; minimum, 42 ppm Mar. 8-12.

Rarchess: Maximum, 130 ppm Nov. 22-30; minimum, 42 ppm Mar. 8-12.

Specific conductance: Maximum daily, 3400 ppm July 8; minimum daily, 191.4 micromhos Mar. 10.

Sediment concentrations: Maximum daily, 3400 ppm July 8; minimum daily, 1 ppm Sept. 17.

Sediment concentrations: Maximum daily, 132.000 tons Feb. 27; minimum daily, 1 ppm Sept. 16-22.

SETTREMES, 1952-56.—Dissolved solids: Maximum, 177 ppm July 18-65, 1955; minimum, 32 ppm Mar. 8-12, 1953.

Rarchess: Maximum, 134 ppm Oct. 14-26 (Nov. 9-21, Dec. 14-22, 1953; minimum, 42 ppm Mar. 8-12, 1953.

Specific conductance: Maximum daily, 308 micromhos Sept. 1, 1955; minimum, freezing point on many days during Winter months.

Sediment concentrations: Maximum daily, 4,200 ppm Aug. 20, 1954; minimum freezing point on many days during November 1953, January 1954, Sediment concentrations: Maximum daily, 4,200 ppm Aug. 20, 1954; minimum daily, 1 ppm on many days during November 1953, January 1954,

Sediment loads: Maximum daily, 132,000 tons Feb. 27, 1955; minimum daily, less than 0.5 ton on many days during October, November, 1952, September 1954 becember, 1953, January 1954, and September 1955, and September 1954.
RRMRARS.—Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1954

to September 1955 given in WSP 1385

•		Color		7	6	-	15	2	9	80	90	<b></b>	ī.	E.	20	<b>∞</b>	9	2
		<u> </u>	7.4	9.1	7.4	7.5				9.7		_	_	-	7.5	-	-C	_
	Specific conduct-	ance (micro- mhos at 25°C)	174	206	224				_			-		_	217	_	-	_
	o,	Non- carbon- ate	13	16	17	16	16	24	58	21	33	59	22	22	26	53	21	92
	Hardness as CaCO,	Calctum, mag- nestum	18	86	86	86	96	130	125	100	122	81	109	69	100	110	81	98
	Dissolved	(residue on evap- oration at 180°C)	107	128	133	138	129	164	162	132	155	111	122	104	130	136	105	116
er 1955	M	(NO _s )	3.2	3.9	2.0	1.4	e.i	4.5	3.8	8.2	6.5	4.7	7.7	7.5	œ .o.	8.8	4.7	5.2
to Septemb	7	(F)	0.2	~	87.	63	63.	es.	٠,	∹:	23	25.	4:	87.	83.	7:	۲.	-: -:
Chemical analyses, in parts per million, water year October 1954 to September 1955	777	(CI)	4.1	3.4	7.5	8.5	7.0	5.0	2.0	6.5	5.0	5.5	8.8	3.5	5.0	5.8	4.2	
er year Oc	0.164	(80,	15	16	20	2	20	56	27	26	27	22	23	18	22	24	27	8
illion, wat	Bicar-	bonate (HCO ₃ )	482	86	86	66	96	128	116	84	108	63	100	28	06	86	72	73
arts per m	Potas-	sium (K)	3.4	3.4	8.5		2.7	3.5	2.1	1.8	1.9	2.2	2.1	3.0	1.2	9.	<b>o</b> 9.	1.6
dyses, in p	0.046	(Na)	8.2	8.7	<b>4</b> .3	5.2	4.7	3.4	2.0	9.0	3.7	3.4	3.0	3.1	3.2	3.6	3.2	2.6
mical ans	Mag-	nesium (Mg)	4.2	4.7	5.4	8.4	3.1	6.5	5.9	5.7	7.0	5.1	5.2	4.7	9.0	7.1	5.4	4.5
Che	Cal-	cium (Ca)			ຂ				_		37	24	35	ន	ຂ	32	ន	22
	į	(Fe)	0.01	5	.05	80.	8	.05	6.	ş.	.05	2.	.28	2.	. 55	6.	8. —	.04
	641400	(8102)	8.8	8.2	7.7	8.3	6.4	5.8	7.2	6.7	7.2	7.9	7.2	7.8	8.0	8.0	7.7	 
	Mean	discharge (cfs)			94.4					1,128	00	N	цэ	μs	4, 442	N	2, 277	7,352
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-21	Nov. 22-30	Dec. 1-8	Dec. 9-14	Dec. 15-20	Dec. 21-27	Dec. 28-31	Jan. 1-4, 1955	Jan. 5-14	Jan. 15-25	Jan. 26-28	Feb. 1-8

# LICKING RIVER BASIN--Continued LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

a Represents 99 percent of days and 99 percent of runoff.

### LICKING RIVER BASIN -- Continued

### LICKING RIVER AT McKINNEYSBURG, KY . -- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at varying hours 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	40	40	40	31	48	45	59	67	75	79	73
2	71	38	38	38	33	47	47	59	68	78	80	73 70 72 73 74
3 4	70	42	39	42	31	48	53	60	69	79	82	72
4	71	40	40	44	32	49	54	62	70	80	82	73
5	72	41	38	46	31	51	52	65	72	81	84	74
6	66	42	36	47	34	51	58	64	74	82	83	73
7	64	42	34	44	35	50	55	65	73	82	84	72
8	60	44	33	43	34	47	55	66	67	78	80	73
9	62	42	32	44	37	48	58	68	68	75	79	74
10	61	43	31	42	38	49	56	65	69	72		75
11	66	44	32	41	36	51		66	66	73	78	76
12	70	42	31	38	34	49	57	65	65	71	75	69
13	71	43	34	37	32	50	59	66	64	73	7"	67
14	66	40	35	36	33	51	60	64	62	75	7/3	69
15	62	45	34	36	32	55	60	62	64	74	74	69 70
16	60	43	34		35	54	58	65	65	76	72	71
17	58	46	33	* 34	36	53	61	63	67	78	72	72
18 19	58	48	32	32	39	50	61	66	68	77	80	74
19	56	50	32	33	38	49	63	64	71	75	8າ່	70
20	54	49	33	31	39	48	64	66	72	74	83	74 70 70
21	52	42	34	32	40	51	65	68	74	75	83	71
22	53	44	33	34	41		63	70	75	78	87	73
23	55	43	32	32	41	48	64	68	76	77	87	72
24	58	42	32	31	41	49	64	69	75	80	78	73
25	60	43	31	32	42	48	63	69	74	79	73	69
26	56	42	32	34	43	45	60	68	76	78	76	68
26 27	55	41	35	32	44	44	58	70	73	80	77	68
28	54	42	37	32	48	43	57	72	74	80	78	68 68 69 67
29	51	40	36			42	57	73	73	78	79	67
30	48	39	35			41	58	70	75	77	89	67
31	45		39			44	3.3	68		78	76	
Aver- age	60	43	34	37	37	48	58	66	70	77	79	71

### LICKING RIVER BASIN -- Continued

### LICKING RIVER AT McKINNEYSBURG, KY . -- Continued

Suspended sediment, water year October 1954 to September 1955

		October			November		Γ	December	
	Mean		d sediment	Mean	Suspende	d sediment	Mean		sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen-	per	charge	conten-	per
	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tra*ion (ppm)	day
1	154	98	41	70	43	8	1,160	100	313
2	359	123	119	65	36	6	966	81	211
3	197	82	44	72	31	6	810	58	127
4	154	82	34	104	31	9	696	38	71
5	260	83	58	128	28	10	606	32	52
6,	230	78	48	134	25	9	516	24	33
7	176	61	29	144	24	9	447	15	18
8	144	57	22	164	23	10	403	17	18
9	122	58	19	188	22	11	510	17	23
10	104	65	18	245	22	14	720	16	31
11	91	77	19	260	29	20	828	18	40
12	83	88	20	250	19	13	1,000	21	57
13	74	96	19	225	16	10	1,570	62	263
14	72 68	99 93	19	193	17	9	2,140	65	376 500
15	96	93	17	171	15	7	1,890	98	500
16	52	63	9	154	11	4	1,700	100	459
17	49	55	7	141	11	4	1,690	93	424
18	44	47	6	128	13	4	3,000	280	sa 2, 900
19	43	42	5	125	15	5	4,650	660	8, 290
20	41	37	4	128	23	8	5,600	747	11, 300
21	57	40	6	1,240	411	s1,780	4,710	520	6, 610
22	128	41	14	816	248	546	3,060	184	1,520
23	119	40	13	552	184	274	2,000	137	740
24	101	44	12	630	187	318	1,510	76	310
25	88	53	12	612	135	223	1,230	63	209
26	78	52	11	708	67	128	1,060	43	123
27	101	55	15	720	58	113	930	38	95
28	116	64	20	780	47	99	1,870	250	sa 2, 100
29	99	70	19	1,460	173	682	4, 320	606	7,070
30 31	81 70	46 42	10 8	1,490	153	616	7,030 8,330	502 668	9,530 15,000
Total .	3,555		697	12,097		4,955	66,952		68,813
	0.500	January			February		L	March	
1 2	8, 500 6, 590	588 330	13,500 b5,900	1,680 1,530	12 9	54 37	22, 200 20, 900	1,200 630	71,900 35,600
3	4,510	244	2,970	1,440	8	31	18,900	397	20, 200
4	4,020	300	a 3, 300	1,710	8	37	17,400	362	17,000
5	7,140	560	10,800	2,560	23	159	22,600	1,570	95,800
.	7, 900	419	8.940	14 200	540	20,800	25,800	1.350	94, 000
6 [ 7	7,910	302	6, 450	14,300 18,200	985	48,400	26,500	810	58,000
8	5, 770	155	0, 100						
9	3,880		2,410	17,400	735	34,500	26,400	515	36, 700
10		102	2, 410 1, 070	17,400 15,700	735 490	34,500 20,800	26,400 25,300	335	36, 700 22, 900
11	2,900		2, 410 1, 070 548	17,400 15,700 13,600	735	34,500	26,400		36, 700
12		102 70	1,070 548	17,400 15,700 13,600	735 490 303	34,500 20,800 11,100	26,400 25,300 22,800	335 238	36, 700 22, 900 14, 600
	2, 440 2, 230	102	1,070	17,400 15,700 13,600	735 490 303 192	34,500 20,800 11,100 5,750	26, 400 25, 300 22, 800 19, 500	335	36, 700 22, 900 14, 600
13	2, 440 2, 230 2, 160	102 70 50 39 27	1,070 548 329 235 157	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350	735 490 303 192 115 97	34,500 20,800 11,100 5,750 2,360 1,140	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810	335 238 190 197 225	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960
14	2, 440 2, 230 2, 160 2, 090	102 70 50 39 27 28	1,070 548 329 235 157 158	17,400 15,700 13,600 11,100 7,610 4,350 3,060	735 490 303 192 115 97 68	34,500 20,800 11,100 5,750 2,360 1,140 562	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440	335 238 190 197 225 288	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230
	2, 440 2, 230 2, 160	102 70 50 39 27	1,070 548 329 235 157	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350	735 490 303 192 115 97	34,500 20,800 11,100 5,750 2,360 1,140	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810	335 238 190 197 225	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960
14	2, 440 2, 230 2, 160 2, 090 2, 020	102 70 50 39 27 28 23	1,070 548 329 235 157 158 125	17,400 15,700 13,600 11,100 7,610 4,350 3,060 2,640	735 490 303 192 115 97 68 55	34,500 20,800 11,100 5,750 2,360 1,140 562 392	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300	335 238 190 197 225 288 1,620	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600
14	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140	102 70 50 39 27 28	1,070 548 329 235 157 158	17,400 15,700 13,600 11,100 7,610 4,350 3,060 2,640	735 490 303 192 115 97 68 55	34,500 20,800 11,100 5,750 2,360 1,140 562 392	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300	335 238 190 197 225 288 1,620	36,700 22,900 14,600 10,000 8,350 5,960 4,230 864,600
14	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330	102 70 50 39 27 28 23 21 20 20	1,070 548 329 235 157 158 125	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 880	735 490 303 192 115 97 68 55	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 15, 400 12, 600	335 238 190 197 225 288 1,620	36,700 22,900 14,600 10,000 8,350 5,960 4,230 864,600 119,000 43,200 13,600
14	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110	102 70 50 39 27 28 23 21 20 20	1,070 548 329 235 157 158 125 121 122 126 97	17, 400 15, 700 13, 800 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 880 7, 270	735 490 303 192 115 97 68 55 76 246 232	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 12, 600 10, 400	335 238 190 197 225 288 1,620 2,530 1,040 400 240	36,700 22,900 14,600 10,000 8,350 5,960 4,230 864,600 119,000 43,200 13,600 6,740
14	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330	102 70 50 39 27 28 23 21 20 20	1,070 548 329 235 157 158 125 121 122 126	17,400 15,700 13,600 11,100 7,610 4,350 3,060 2,640 3,380 6,680	735 490 303 192 115 97 68 55 76 248 232	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300	335 238 190 197 225 288 1,620 2,530 1,040 400	36,700 22,900 14,600 10,000 8,350 5,960 4,230 864,600 119,000 43,200 13,600
14 15 16 17 18 19 20	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810	102 70 50 39 27 28 23 21 20 20 17 16	1,070 548 329 235 157 158 125 121 122 126 97 78	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 270 5, 430	735 490 303 192 115 97 68 55 76 248 232 140 86	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8,749 4,440 4,920 2,750 1,260	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 12, 600 10, 400 9, 460	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720
14 15 16 17 18 20	2, 440 2, 230 2, 180 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810	102 70 50 39 27 28 23 21 20 20	1,070 548 329 235 157 158 125 121 122 126 97	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 270 5, 430 4, 960	735 490 303 192 115 97 68 55 76 248 232 140 86	34,500 20,800 11,100 5,750 2,360 1,140 392 s 749 4,440 4,920 2,750 1,260 s1,670 30,200	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 12, 600 10, 400 9, 460 18, 000	335 238 190 197 225 288 1,620 2,530 1,040 400 240	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720
14 15 16 17 18 20 21 22 23	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810 1, 570 1, 510 2, 090	102 70 50 39 27 28 23 21 20 20 17 16	1,070 548 329 235 157 158 125 121 122 126 97 78 55 53	17, 400 15, 700 13, 800 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 880 7, 270 5, 430 4, 960 13, 800 13, 200	735 490 303 192 115 97 68 55 76 246 232 140 86	34,500 20,800 11,100 5,750 2,360 1,140 5,62 392 8,749 4,440 4,920 2,750 1,260 s1,670 30,200 21,000 21,000	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 12, 600 10, 400 9, 480 18, 000 22, 500 20, 000	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 486 394	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 8, 740 4, 720 42, 400 28, 300 21, 300
14	2, 440 2, 230 2, 180 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810 1, 570 1, 510 2, 090 3, 160	102 70 50 39 27 28 23 20 20 17 16	1,070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452	17, 400 15, 700 13, 800 11, 100 7, 810 4, 350 3, 060 2, 640 3, 380 6, 680 7, 270 5, 430 13, 200 13, 200 12, 500	735 490 303 192 115 97 68 55 76 248 232 140 86 114 811 590 310	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8 749 4,40 4,920 2,750 1,260 81,670 30,200 21,000 10,500	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 15, 400 12, 600 10, 400 9, 460 18, 000 22, 500 20, 000 16, 700	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 486 394 298	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400
14 15 16 17 18 20 21 22 23	2, 440 2, 230 2, 160 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810 1, 570 1, 510 2, 090	102 70 50 39 27 28 23 21 20 20 17 16	1,070 548 329 235 157 158 125 121 122 126 97 78 55 53	17, 400 15, 700 13, 800 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 880 7, 270 5, 430 4, 960 13, 800 13, 200	735 490 303 192 115 97 68 55 76 246 232 140 86	34,500 20,800 11,100 5,750 2,360 1,140 5,62 392 8,749 4,440 4,920 2,750 1,260 s1,670 30,200 21,000 21,000	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 17, 400 12, 600 10, 400 9, 480 18, 000 22, 500 20, 000	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 486 394	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 8, 740 4, 720 42, 400 28, 300 21, 300
14	2,440 2,230 2,180 2,090 2,020 2,140 2,250 2,330 2,110 1,810 1,570 1,510 2,090 3,160 3,270	102 70 50 39 27 28 23 21 20 20 17 16	1, 070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452 706	17, 400 15, 700 13, 800 11, 100 7, 810 4, 350 3, 960 2, 640 3, 380 6, 680 7, 270 5, 430 4, 960 13, 800 12, 500 9, 990	735 490 303 192 115 97 68 55 76 246 232 140 86 114 811 590 310 125	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 81,670 30,200 21,000 10,500 3,070	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 12, 600 10, 400 9, 480 18, 000 22, 500 20, 000 16, 700 14, 500	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 466 394 228 250	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400 9, 780
14	2, 440 2, 230 2, 180 2, 090 2, 020 2, 140 2, 250 2, 330 2, 110 1, 810 1, 570 1, 510 2, 990 3, 160 3, 273 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 330 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2, 300 2,	102 70 50 39 27 28 23 20 20 17 16	1,070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 280 7, 270 5, 430 4, 960 13, 200 12, 500 9, 090 7, 450 19, 800	735 490 303 192 115 97 68 55 76 248 232 140 86 114 811 590 310	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 s1,670 30,200 21,000 10,500 3,070 88,950	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 15, 400 12, 600 10, 400 9, 460 18, 000 22, 500 20, 000 16, 700	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 486 394 298	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400
14	2,440 2,230 2,190 2,990 2,020 2,120 2,330 2,110 1,810 2,930 3,160 3,270 2,730 2,300 2,730 2,730 2,730	102 70 50 39 27 28 23 21 20 17 16 13 13 20 53 80 43 25 20	1, 070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452 706 317 155 97	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 280 7, 270 5, 430 4, 960 13, 200 12, 500 9, 090 7, 450 19, 800	735 490 303 192 115 97 68 55 76 246 232 140 86 114 811 590 310 125	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 81,670 30,200 21,000 10,500 3,070 88,950 132,000	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 300 12, 600 10, 400 9, 480 22, 500 20, 000 16, 700 14, 500 12, 700 14, 500	335 238 190 197 225 288 1,620 2,530 1,040 240 240 185 872 466 394 298 250	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400 9, 780 5, 590 3, 680 1, 900
14	2,440 2,230 2,180 2,090 2,020 2,250 2,330 2,110 1,810 1,570 1,510 2,990 3,160 3,270 2,300 1,800	102 70 50 39 27 28 23 21 20 20 17 16 13 13 20 53 80 43 25 20 18	1, 070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452 706 317 155 97	17, 400 15, 700 13, 800 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 270 5, 430 4, 960 13, 200 12, 500 9, 090 7, 450 19, 800 19, 800	735 490 303 192 115 97 68 55 76 246 232 140 86 114 81 125 394 2,480 1,470	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 s1,670 30,200 21,000 10,500 3,070 88,950	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 400 12, 600 12, 600 12, 600 22, 500 22, 500 20, 000 14, 500 12, 700 14, 500 12, 200 6, 300 3, 870	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 466 394 298 250 163 134 112 82	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400 9, 780 5, 590 3, 680 1, 900 887
14	2,440 2,230 2,180 2,090 2,020 2,250 2,330 2,110 1,810 1,570 1,510 2,990 3,160 3,270 2,300 1,800	102 70 50 39 27 28 23 21 20 17 16 13 13 20 53 80 43 25 20 18 16	1, 070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452 706 317 155 97 b85 570	17, 400 15, 700 13, 600 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 280 7, 270 5, 430 4, 960 13, 200 12, 500 9, 090 7, 450 19, 800	735 490 303 192 115 97 68 55 76 246 232 140 86 114 811 590 310 125 400 400 400 400 400 400 400 400 400 40	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 81,670 30,200 21,000 10,500 3,070 88,950 132,000	26, 400 25, 300 22, 800  19, 500 15, 700 9, 810 5, 440 11, 300 12, 600 10, 400 9, 480 18, 000 22, 500 20, 000 16, 700 14, 500 12, 700 14, 500 12, 700 14, 500 3, 870 3, 905	335 238 190 197 225 288 1,620 2,530 1,040 240 240 185 872 466 394 298 250 163 114 112 82 66	36, 700 22, 900 14, 800 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400 9, 780 5, 580 3, 680 1, 900 887 544
14	2,440 2,230 2,190 2,990 2,020 2,120 2,330 2,110 1,810 2,930 3,160 3,270 2,730 2,300 2,730 2,730 2,730	102 70 50 39 27 28 23 21 20 20 17 16 13 13 20 53 80 43 25 20 18	1, 070 548 329 235 157 158 125 121 122 126 97 78 55 53 113 452 706 317 155 97	17, 400 15, 700 13, 800 11, 100 7, 610 4, 350 3, 060 2, 640 3, 380 6, 680 7, 270 5, 430 4, 960 13, 200 12, 500 9, 090 7, 450 19, 800 19, 800	735 490 303 192 115 97 68 55 76 246 232 140 86 114 81 125 394 2,480 1,470	34,500 20,800 11,100 5,750 2,360 1,140 562 392 8749 4,440 4,920 2,750 1,260 81,670 30,200 21,000 10,500 3,070 88,950 132,000	26, 400 25, 300 22, 800 19, 500 15, 700 9, 810 5, 440 11, 400 12, 600 12, 600 12, 600 22, 500 22, 500 20, 000 14, 500 12, 700 14, 500 12, 200 6, 300 3, 870	335 238 190 197 225 288 1,620 2,530 1,040 400 240 185 872 466 394 298 250 163 134 112 82	36, 700 22, 900 14, 600 10, 000 8, 350 5, 960 4, 230 8 64, 600 119, 000 43, 200 13, 600 6, 740 4, 720 42, 400 28, 300 21, 300 13, 400 9, 780 5, 590 3, 680 1, 900 887

s Computed by subdividing day.
a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

### LICKING RIVER BASIN

### LICKING RIVER BASIN--Continued

### LICKING RIVER AT McKINNEYSBURG, KY.--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

			seument, v	13			,		
	<u> </u>	April		<b>I</b>	May			June	
	Mean	Suspende	d sediment		Suspende	d sediment	N	Suspende	d sediment
Day	dis-	Mean		Mean dis-	Mean		Mean dis-	Mean	
,	charge	concen-	Tons per	charge	concen-	Tons	charge	concen -	Tons
	(cfs)	tration	day	(cfs)	tration	per	(cfs)	tration	per
	(312)	(ppm)	uay		(ppm)	day	(010)	(ppm)	day
1	2, 210	41	245	1,750	50	236	1,060	210	601
2	1,920	41	212	1,450	36	141	726	205	402
3	1,700	30	138	1, 230	27	90	522	127	179
4	1,540	22	91	1,060	17	49	392	78	82
5	1,390	24	90	912	13	32	315	70	60
	ĺ	i	į į	((		i i	!	1	ĺ
6	1,290	20	70	786	13	28	260	57	40
7	1,210	19	62	684	13	24	245	53	35
8	1,080	.12	35	600	14	23	870	180	<b>sa 50</b> 0
9	990	10	27	534	16	23	1,540	311	1,290
10	918	15	37	480	18	23	1,820	382	1,880
		]		]					
11	924		e 140	447	19	23	1,690	258	1,180
12	1,860		e 1,900	408	15	16	3,110	470	3,950
13	1,520	184	755	810	485	s 2, 200	2,960 1,770	465	3,720
14	1,310	68	240	4,900		e 32, 000	1,770	232	1,110
15	1,250	43	145	4,110	1,140	12,600	1,520	183	751
	ĺ	l	1 !		_	[	Ι.	'	
16	1,370	43	159	6, 340	640	11,000	1,220	94	310
17	2, 170	<b>7</b> 0	410	4,500	214	2,600	978	68	180
18	1,980	52	278	2,540	97	665	798	54	116
19	1,610	52	226	1,720	82	381	636	42	72
20	1,360	52	191	1,280	55	190	492	32	42
		1	) !	]	l	] ]	l	] [	i
21	1,210	42	137	1,040	42	118	386	25	26
22	1,120	31	94	1,160	750	sa 2, 600	337	25	23
23	1,160	34	106	1,630	700	sa 3, 200	337	27	24
24	1.450	44	172	1, 180	740	s 2,480 (	298	23	18
25	1,760	53	252	1,030	240	667	260	20	14
			1				1	1	
26	2,830	112	856	1,100	155	460	266	16	11
27	3,020	143	1,170	1,030	127	353	293	27	21
28	3,160	98	836	726	82	161	642	43	74
29	2,590	] 68	476	] 780	80	sa 210	828	42	94
30	2,120	60	343	1,440	260	sa 1, 100	618	30	50
31		<del></del>	<del>  </del>	1,540	437	1,820			
Total.	50,022		9,893	49, 197		75, 513	27, 189		16,855
		July			Aumot			September	
					August				
1	447	28	34	1 1 060 1	136	389	72	1 29	. 6
				1,060	100				
2	320	25	22	732	88	174	63	26	4
3	320 240	25 23	22 15	732 522	88 <b>63</b>	174 89	63 52	26 26	4 4
3 4	320 240 201	25 23 23	22 15 12	732 522 381	88 63 53	174 89 54	63 52 47	26 26 25	4 4 3
3	320 240	25 23	22 15	732 522	88 <b>63</b>	174 89	63 52	26 26	4
3 4 5	320 240 201 193	25 23 23 22	22 15 12 11	732 522 381 288	88 63 53 47	174 89 54 36	63 52 47 41	26 26 25 24	4 4 3 3
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3	320 240 201 193 288 1,100 5,260	25 23 23 22 20  3,400	22 15 12 11 18 e 6,600 sa51,000	732 522 381 288 225 215 332	88 63 53 47 43 51 68	174 89 54 36 26 30 61	63 52 47 41 37 32 30	26 26 25 24 21 17 14	4 4 3 3 2 1
3	320 240 201 193 288 1,100 5,260 5,010	25 23 23 22 20  3,400 3,320	22 15 12 11 18 e 6,600 sa51,000 s 52,600	732 522 381 288 225 215 332 726	88 63 53 47 43 51 68	174 89 54 36 26 30 61 e 400	63 52 47 41 37 32 30 28	26 26 25 24 21 17 14 12	4 4 3 3 2 1 1
3	320 240 201 193 288 1,100 5,260	25 23 23 22 20  3,400	22 15 12 11 18 e 6,600 sa51,000	732 522 381 288 225 215 332	88 63 53 47 43 51 68	174 89 54 36 26 30 61	63 52 47 41 37 32 30	26 26 25 24 21 17 14	4 4 3 3 2 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680	25 23 23 22 20  3,400 3,320 2,410	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500	732 522 381 288 225 215 332 726 1,270	88 63 53 47 43 51 68	174 89 54 36 26 30 61 e 400 e 2,500	63 52 47 41 37 32 30 28 28	26 26 25 24 21 17 14 12 15	4 3 3 3 2 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680	25 23 23 22 20  3,400 3,320 2,410 1,620	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500	732 522 381 288 225 215 332 726 1,270	88 63 53 47 43 51 68 	174 89 54 36 26 30 61 e 400 e 2,500	63 52 47 41 37 32 30 28 28	26 26 25 24 21 17 14 12 15	4 4 3 3 2 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500	25 23 23 22 20 20 3,320 2,410 1,620 850	22 15 12 11 18 e6,600 sa51,000 s52,600 43,500 43,200 24,100	732 522 381 288 225 215 332 726 1,270	88 63 53 47 43 51 68   560	174 89 54 36 26 30 61 e 400 e 2,500	63 52 47 41 37 32 30 28 28 28	26 26 25 24 21 17 14 12 15	4 3 3 3 2 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770	25 23 23 22 20  3,400 3,320 2,410 1,620 850 370	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,500 24,100 3,770	732 522 381 288 225 215 332 726 1,270 1,280 618 386	88 63 53 47 43 51 68   560 130	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110	63 52 47 41 37 32 30 28 28 28	26 26 25 24 21 17 14 12 15 15	4 3 3 3 2 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220	25 23 23 22 20 20 3,400 3,320 2,410 1,620 850 370 192	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,500 43,700 24,100 3,770 632	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310	88 63 53 47 43 51 68   560 130 106	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84	63 52 47 41 37 32 30 28 28 28 26 24	26 26 25 24 21 17 14 12 15 15 15	4 4 3 3 2 1 1 1 1 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770	25 23 23 22 20  3,400 3,320 2,410 1,620 850 370	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,500 24,100 3,770	732 522 381 288 225 215 332 726 1,270 1,280 618 386	88 63 53 47 43 51 68   560 130	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110	63 52 47 41 37 32 30 28 28 28	26 26 25 24 21 17 14 12 15 15	4 3 3 2 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220 864	25 23 23 22 20 3,400 3,320 2,410 1,620 370 192 94	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,200 24,100 3,770 632 219	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255	88 63 53 47 43 51 68  560 130 106 100	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71	63 52 47 41 37 32 30 28 28 28 26 24 22 20	26 26 25 24 21 17 14 12 15 15 15 15 18 10	4 4 3 3 3 2 1 1 1 1 1 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220 864	25 23 23 22 20 20 3,400 3,320 2,410 1,620 850 370 192	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,500 43,200 24,100 3,770 632 219	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255	88 63 53 47 43 51 68   560 130 106 100 103	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71	63 52 47 41 37 32 30 28 28 28 26 24 22 20	26 28 25 24 21 17 14 12 15 15 15 18 10	4 4 3 3 3 2 1 1 1 1 1 1 1 1
3	320 240 201 193 288 1,100 5,260 5,010 6,680 10,500 3,770 1,220 864 654 1,710	25 23 23 22 20 	22 15 12 11 18 e.6,600 sa51,000 s52,600 43,500 43,500 24,100 3,770 632 219	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255	88 63 53 47 43 51 68   560 106 100 103	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71	63 52 47 41 37 32 30 28 28 28 28 26 24 22 20	26 28 25 24 21 17 14 12 15 15 15 18 10 2	4 4 3 3 2 1 1 1 1 1 1 1
3. 4	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220 864 654 1,710 6,890	25 23 23 22 20 3,400 3,320 2,410 1,620 850 370 192 94 67  3,200	22 15 12 11 18 e6.600 sa51,000 s52,600 43,500 43,500 43,200 24,100 3,770 632 219 118 e9,800 59,500	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255	88 63 53 47 43 51 68  560 130 106 100 103	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71	63 52 47 41 37 32 30 28 28 28 26 24 22 20	26 28 25 24 21 17 14 12 15 15 15 18 10	4 4 3 3 2 1 1 1 1 1 1 1 1 1 1
3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	220 240 201 193 288 1,100 5,260 5,200 5,010 6,680 3,770 1,220 864 654 1,710 6,890 4,490	25 23 22 20 3, 400 3, 320 2, 410 1, 850 370 192 94 67  3, 200	22 15 12 11 18 e 6,600 sa51,000 s 52,600 43,200 24,100 3,770 632 219 118 e 9,800 59,500	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45	174 89 54 36 26 30 61 e 400 e 2,500 1,940 110 84 71 59 30 21 14	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 18	26 26 25 24 21 17 14 12 15 15 15 18 10 2 1	4 4 3 3 3 2 1 1 1 1 1 1 1 1
3. 4	320 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220 864 654 1,710 6,890	25 23 23 22 20 3,400 3,320 2,410 1,620 850 370 192 94 67  3,200	22 15 12 11 18 e6.600 sa51,000 s52,600 43,500 43,500 43,200 24,100 3,770 632 219 118 e9,800 59,500	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255	88 63 53 47 43 51 68  560 130 106 100 103	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71	63 52 47 41 37 32 30 28 28 28 26 24 22 20	26 28 25 24 21 17 14 12 15 15 15 18 10	4 4 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 5. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	220 240 201 193 201 193 201 5, 260 5, 501 6, 680 9, 880 10, 500 10, 500 10, 500 10, 500 4, 400 4, 490 2, 270	25 23 23 22 20  3,400 3,320 2,410 1,620 850 370 192 94 67  3,200 1,980 1,150	22 15 12 11 18 e 6,600 sa51,000 s 852,600 43,500 43,500 43,200 24,100 3,770 232 211 118 e 9,800 59,500 7,050	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119	88 63 53 47 43 51 68  580 130 106 100 103 111 89 53 45	174 89 54 36 26 30 61 e 400 e 2,500 1,940 110 84 71 59 30 21 14	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 18	26 26 25 24 21 17 14 12 15 15 15 18 10 2 2 1 3 5	4 4 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3	220 240 201 193 288 1,100 5,260 5,010 6,880 9,880 10,500 1,220 884 054 1,710 6,890 4,490 2,270	25 23 23 22 20 20 3, 400 3, 320 2, 410 1, 620 370 192 94 67 7- 3, 200 1, 150	25 12 11 18 e 6,600 sa51,000 s 52,600 43,500 43,200 24,100 3,770 632 219 118 e 9,800 59,500 24,000 7,050	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119 101	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39	174 89 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 18 18	26 26 25 24 21 17 14 12 15 15 15 18 10 2 1	4 4 3 3 2 1 1 1 1 1 1 1 1 1 1
3	220 240 201 193 288 1,100 5,260 5,010 6,880 9,880 10,500 1,220 884 054 1,710 6,890 4,490 2,270	25 23 23 22 20 20 3,400 1,620 3,320 2,410 1,620 94 67  3,200 1,980 1,150	22 15 12 11 18 e 6,800 sa51,000 s 52,600 43,500 43,500 24,100 3,770 632 219 118 e 9,800 24,000 7,050	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 184 144 119 101	88 63 53 47 43 51 68  580 130 100 103 111 69 53 45 39	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 18 16 16	26 28 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9	4 4 3 3 2 1 1 1 1 1 1 1 1 1 1
3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	220 240 201 193 288 1,100 5,260 6,680 9,880 10,500 1,220 864 1,710 6,890 4,490 2,270 1,450 1,070 780	25 23 23 22 20 20 3, 400 3, 320 2, 410 1, 620 370 192 94 67 7- 3, 200 1, 150	22 11 18 e 6,800 sa51,000 s 52,600 43,500 24,100 3,770 632 219 118 e 9,800 24,000 7,050 1,530 299 e 2,800	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119 101	88 63 53 47 43 51 68  560 130 100 103 111 19 53 45 39	174 89 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 30 28 28 26 24 22 20 18 18 18 18 16 16	26 25 24 21 17 14 12 15 15 15 15 15 15 15 19 9	4 4 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	220 240 201 193 288 1,100 5,260 5,010 6,880 9,880 10,500 1,220 884 054 1,710 6,890 4,490 2,270	25 23 23 22 20 20 3,400 1,620 3,320 2,410 1,620 94 67  3,200 1,980 1,150	22 11 18 e 6,800 sa51,000 s 52,600 43,500 24,100 3,770 632 219 118 e 9,800 24,000 7,050 1,530 299 e 2,800	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 184 144 119 101	88 63 53 47 43 51 68  580 130 100 103 111 69 53 45 39	174 89 54 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 18 16 16	26 28 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 5	220 240 201 193 288 1,100 5,260 5,000 3,770 1,220 884 654 1,710 6,890 4,490 2,270 1,450 1,070 1,370 2,060	25 23 23 22 20 3,400 3,320 2,410 1,620 850 370 192 94 67 -3,200 1,150 390 203 142 -710	22 11 18 e 6,600 sa51,000 s 52,600 43,500 24,100 3,770 632 219 118 e 9,800 24,000 7,050 1,530 586 29,800 3,950	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 119 101 91	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39	174 89 54 36 26 61 61 62,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 32 28 28 28 24 22 20 18 18 16 16 16	26 28 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9 9	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	220 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 3,770 1,220 884 654 1,710 6,890 4,490 2,270 1,450 1,070 1,800	25 23 23 22 20 20 3, 400 850 370 192 94 67 3, 200 1, 980 1, 150 203 142	22 15 12 11 18 e.6.600 sa51,000 p.52,600 43,500 43,500 43,200 24,100 3,770 632 219 18 e.9.800 24,000 27,050 1,530 59,500 24,000 27,050 1,530 59,500 24,000 3,950 4,520	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 119 101 91	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39	174 89 54 36 26 61 61 62,500 1,940 217 110 84 71 59 30 21 14 11	63 52 47 41 37 32 32 28 28 28 24 22 20 18 18 16 16 16	26 28 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9 9	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	240 240 201 193 288 1,100 5,260 5,010 6,680 9,880 10,500 1,220 864 1,710 6,890 2,270 1,450 1,450 1,370 2,270	25 23 23 22 20 3,400 3,320 2,410 1,620 850 370 192 94 67 -3,200 1,150 390 203 142 -710	22 15 12 11 18 e.6.600 sa51,000 p.52,600 43,500 43,500 43,200 24,100 3,770 632 219 18 e.9.800 24,000 27,050 1,530 59,500 24,000 27,050 1,530 59,500 24,000 3,950 4,520	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 104 144 119 101 91 210 220	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39 35 36 40 38	174 89 54 36 26 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11 11 8 9	63 52 47 41 37 32 30 28 28 26 24 22 20 18 18 18 16 16 16 20 38 51 65	26 28 25 24 21 17 14 12 15 15 15 15 18 10 2 1 3 5 9 9 9 9	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	220 240 201 193 288 1,100 5,260 5,000 3,770 1,220 884 654 1,710 6,890 4,490 2,270 1,450 1,070 1,370 2,060	25 23 23 22 20 20 3,400 3,320 2,410 1,620 850 370 192 94 67  3,200 1,980 1,150 203 142  710 805	22 11 11 e 6,600 sa51,000 s 52,600 43,500 43,500 43,200 24,100 3,770 632 219 118 e 9,800 59,500 24,000 7,050 1,530 586 299 e 2,800 3,950 4,520 1,020	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 114 119 101 210 220 144 131	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39 35 36 40 38 40 38 43	174 89 89 36 26 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11 11 8 9 11 23 22	63 52 47 41 37 32 30 28 28 28 24 22 20 18 18 16 16 16 20 38 51 65	26 26 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9 9 40 22 17	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	220 240 201 193 288 1,100 5,260 6,680 9,880 10,500 1,220 864 1,710 6,890 2,270 1,450 1,370 2,080 1,430 2,130 2,130 2,130	25 23 23 22 20 20 3, 400 3, 320 2, 410 1, 620 370 192 94 67 7- 3, 200 1, 150 390 203 142 203 147 710	22 112 111 18 e 6,600 8a51,000 8a52,600 43,500 43,500 43,200 24,100 3,770 219 118 e 9,800 59,500 7,050 1,530 586 24,000 7,050 1,530 4,520 1,020 1,550	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119 101 91 101 210 220	88 63 53 47 43 51 68  560 130 100 103 111 69 53 45 39 35 40 40 38	174 89 54 36 26 30 61 e 400 e 2,500 1,940 110 84 71 59 30 21 14 11 8 9 11 23 22	63 52 47 41 37 32 30 28 28 28 24 22 20 18 18 18 16 16 16 20 38 51 65	26 25 24 21 17 14 12 15 15 15 18 10 2 1 3 5 9 9 9 40 22 17	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 5. 6. 7. 8. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 220. 22. 23. 24. 25. 26. 227. 28. 29.	220 240 201 193 288 1,100 5,260 6,680 9,880 10,500 1,220 864 1,710 6,890 2,270 1,450 1,370 2,080 1,430 2,130 2,130 2,130	25 23 23 22 20  3,400 3,320 2,410 1,620 370 192 94 67  3,200 1,980 1,150 203 142  710 805 265 270	25 112 111 18 e 6,600 sa51,000 sb52,600 43,500 43,500 43,200 24,100 3,770 632 219 118 e 9,800 59,500 24,000 7,050 1,530 2,800 3,950 4,520 1,020 1,550 6,610	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119 101 210 220 144 131 157	88 63 53 47 43 51 68  560 130 100 103 111 19 53 45 39 35 36 40 40 38 43 43 43 43	174 89 36 36 30 61 e 400 e 2,500 1,940 217 110 84 71 59 30 21 14 11 23 22 17 15 11	63 52 47 41 37 32 30 28 28 26 24 22 20 18 18 18 16 16 20 38 51 65 47 38 38 38	26 26 25 24 21 17 14 12 15 15 15 15 15 18 10 2 1 3 5 9 9 9 40 22 17 31 45 27 47	4 4 4 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3. 4. 4. 5	220 240 201 193 288 1,100 5,260 6,680 9,880 10,500 1,220 864 1,710 6,890 2,270 1,450 1,370 2,080 1,430 2,130 2,130 2,130	25 23 23 22 20 20 3,400 3,320 2,410 1,620 370 192 94 67 7- 3,200 1,980 203 142 27 710 805 265 270 900	22 112 111 18 e 6,600 8a51,000 8a52,600 43,500 43,500 43,200 24,100 3,770 219 118 e 9,800 59,500 7,050 1,530 586 24,000 7,050 1,530 4,520 1,020 1,550	732 522 381 288 225 215 332 726 1,270 1,280 618 386 310 255 197 164 144 119 101 91 101 210 220	88 63 53 47 43 51 68  580 100 100 103 111 89 53 45 39 35 40 40 40 40 38	174 89 54 36 26 30 61 e 400 e 2,500  1,940 1,110 84 71 59 30 21 14 11 8 9 11 23 22 17 15 21	63 52 47 41 37 32 30 28 28 28 26 24 22 20 18 18 16 16 16 16 16 5 5 5 7 3 8	26 26 25 24 21 17 14 12 15 15 15 18 10 2 2 1 3 5 9 40 22 17 31 45 27	4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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s Computed by subdividing day.

t Less than 0.5 ton.
a Computed from partly estimated concentration graph.

### LICKING RIVER BASIN -- Continued

# LICKING RIVER AT MCKINNEYSBURG, KY .-- Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipette; S, sieve; N, in native water;

			Water					ő.	Suspended sediment	ediment							:
Date of collection	Time	Discharge (cfs)	tem-	Concentration	Concentration of suspension				Percent flu	ner than l	Percent finer than indicated size, in millimeters	ze, in mii	llimeters				Methods of analysis
		-	ature (*F)	of sample (ppm)	analyzed (ppm)	0.003	0.004	0.008	0.016	0.031	0.062	0.125	0, 250	0.350	0.500	1.000	
Dec. 20, 1954	7:20 p.m.	5,690		823	1,580	42	28	69	88	95	56 66	96	100				BSWCM
Dec. 29		3,330		571	1,180	# 83	3 8	8 2	8	96	86	66	9				BSWCM
Dec. 30		7,360		535	1,160	84.8	262	23	88	<b>7</b> 6 6	95	97	6 2				BSWCM
		3, 5		3		3	3	3	3	:	:	;					
Jan. 5	9:00 a.m.			346	617	28	88	77	98	88	96	84	000				BSWCM
Jan. 5	3:45 p.m.			808	765	20	4.0	2 5	28	3 8	2 6	20 5	3				BSWCM DCWCM
Feb 7	4.00 a.m			1,020	2 370	2 4	22.00	2 5	8 6	96	66	8 9	: :				BSWCM
Feb. 10	11:15 a.m.	13,700		300	879	22	2	82	68	86	66	100	;				BSWCM
	-					:		;	5	ż		5					DOMESTICAL
Feb. 22	7:30 a.m.	14,800		1,120	1,290	4.	ž :	2	200	c s	5 6	99	ŀ				DSWCM DGMCM
Feb. 27	7:40 a.m.	21,600		3, 140	2,870	<b>4</b> 2	, a	2 6	8 8	e e	8 8	3 5	: :				BSWCM
Mar 1	11:50 p.m.	22,000	_	187	1,230	5 6	3 6	25.	8	8 8	0 0	8 8					BSNM
Mar. 2	5:00 p.m.	20, 700		557	974	4	88	28	88	96	68	66	100				BSWCM
											;	,					
Mar. 5	4:30 p.m.	23,200		1,440	2,260	4.	<b>7</b> 5	8 5	8 8	<b>5</b> 6	B 0	3 5	: :				BSWC M
Mar. 15.	5.00 m	17,100		2 740	2,010	2.4	- 5	5 6	88	52	66	9	;				BSWCM
Mar. 15	5:00 p.m.	17, 100		2,740	2,240	2 23	44	29	16	8	66	100	;				BSNM
Mar. 16	6:30 a.m.	18,600		2,760	2,220	44	53	89	81	88	66	9	1				BSWCM
Mar. 21	5:00 p.m.	18,500		943	1,580	45	8	7.5	98	- 6	66	9	;				BSWCM
May 13	6:00 n m	1, 180		1.300	1.350	21	64	42	91	86	66	100	;				BSWCM
May 22	7:00 a.m.	1,310		1,270	2,280	64	84	97	86	66	100	;	;				BSWCM
July 8	8:40 n.m.	3,510		2,680	1.400	47	49	82	86	66	100	1	:				BSWCM
July 9	3:55 p.m.	8,040		3,310	1,620	88	20	49	83	97	100	1	;				BSWCM
Into 0.8		8 470		4 700	1	45	55	20	88	96	100	1	;				BSWCM
July 11	_	0,000	_	200	1 240	2 2	3 6		88	26	100	;	;				BSWCM
July 18	7.00 2	7,530		3,420	2,620	3 4	2 95	202	88	. 8	100	ì	;				BSWCM
	6:00 a.m.	2,690		911	1,440	46	20	74	92	86	100	;	;				BSWCM

### LICKING RIVER BASIN -- Continued

### SOUTH FORK LICKING RIVER AT CYNTHIANA, KY.

LOCATION.--At gaging station at bridge on State Highways 356 and 36, at Cynthiana, Harrison County, 0.4 mile downstream from Grays Run, and in pool formed by old mill dam 2.6 miles downstream.

DRAINAGE AREA.--615 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to August 1951.

Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 83°F July 14; minimum, 33°F on several days during January and February.

EXTREMES, 1949-55.--Water temperatures: Maximum, 83°F June 30, 1952, July 14, 1974; minimum, freezing point on several days during December 1953.

REMARKS.--Daily water temperatures reported are averages of twice-daily measurements. The data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WS° 1385.

Temperature (°F) of water, water year October 1954 to September 1955

/Twice-daily measurements at approximately 6:30 a.m. and 6 p. m. 7

			/Twice-d	aily meas	urements	at approx	kimately t	:30 a.m.	and 6 p.	n./		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	46	40	42	34	48	48	66	68	80	79	70
2	72	43	40	44	34	48	50	66	68	80	79	70
3	72	42	40	46	33	50	52	67	68	81	79	70
4	72	41	40	48	34	51	52	68	70	82	80	71
5	74	42	40	49	34	52	53	70	71	82	80	71
6	71	42	36	48	34	50	53	70	72	82	81	70
7	64		34	46	36	45	52	69	72	82	80	70
8	62		35	43	35	46	51	69	71	82	78	70
9	64		36	44	36	46	54	68	69	81	78	70
10	65		35	42	38	47	56	70	66	80	78	72
11	67		34	40	34	50	58	70	65	80	78	72
12	68	47	35	38	33	53	62	70	65	80	76	70
13	70	46	34	36	33	52	64	70	65	82	74	70
14	70	48	35	34	34	52	64	68	64	82	73	72
15		49	35	36	35	54	65	67	66	82	74	72
16		50	35	36	37	54	65	66	67	80	77	72
17		51	37	36	37	52	66	64	70	79	77	72
18	59	51	36	35	38	48	65	62	72	78	77	72
19	56	52	34	35	41	47	67	64	72	78	78	72
20	54	52	34	35	44	48	68	68	73	78	78	72
21	54	50	35	35	43	49	70	70	74	80	79	72
22	54	48	35	35	42	48	70	70	74	80	79	71
23	54	46	36	34	40	47	67	70	74	80	78	71
24	54	45	36	34	40	48	65	71	74	80	77	70
25	56	44	36	35	42	46	63	71	74	79	74	69
26	59	44	36	35	43	42	60	71	72	79	73	68
27	59	44	36	34	45	38	60	72	70	78	72	70
28	54	46	38	33	46	39	60	72	72	78	72	69
29	54	42	38	33		42	62	72	75	78	72	68
30	51	40	36	33		44	64	70	78	78	72	69
31	48		38	34		46		69		79	70	_ ==
Aver- age	62	46	36	38	38	48	60	69	70	80	77	71

### OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND.

--About 1,100 feet upstream from dam, lock and dam 39 (mile 531.7) near Florence, Switzerland County, 1,350 feet upstream from Stevens Creek, and

No discharge records available for this station. 8,100 feet downstream from Craigs Creek.

BRACHAGA FAL-A22, 2016 square miles.

RECORDS AVAILABLE.-Chemical analyses: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

RYSTERENS. 1954-55.—Dissolved Solids: Maximum, 374 ppm Aug. 21-31; minimum, 129 ppm Mar. 1-10.

Rarchess: Maximum, 205 ppm Aug. 21-31; minimum, 85 ppm Mar. 1-10.

Specific conductance: Maximum, 90 °F Aug. 9-10; minimum freezing point Jan. 24.

Water temperatures: Maximum, 90 °F Aug. 9-10; minimum freezing point Jan. 24.

REMARKS.—Records of specific conductance of daily samples available in district office at Columbus, Ohio.

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	Specific conduct- ance	(micro- mhos at 25°C)	50g 108	298	325	362	407	351	282	266	304	292	281	288	212	Ì	246	338	361	8	312	326	
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:	So.	Non- carbon- ate	98 128	8 2	98	8	86	85	73	2 2	20	19	8	9	22	3	28	80	82	8	2.5	7.4	
	Hardness as CaCO	Calcium, mag- nesium	134	106	11	127	137	120	101	10.5	116	110	107	113	45 o	3	100	138	150	2	120	127	
55	Dissolved solids (residue	on evap- oration at 180°C)	244 333	188	198	220	249	215	170	157	171	a 177	169	174	123	}	120	205	220	189	186	206	
mber 19	Ni- trate	(NO ₃ )	5.4	4 E	5.0	<b>4</b> .8	8.4	7.1	4.5	4. rc	4.	4.6			80 4		3.5	5.0	5.4		 	.0.	
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ĺ	Tem- pera-	(°F)																					of zinc
	Mean discharge	(cts)																					s per million
	Date of collection		Oct. 1-10, 1954	Oct. 21-31	Nov. 11-20	Nov. 21-30	Dec. 1-10	Dec. 11-20	Dec. 21-31	Jan. 1-8, IU, 1955	Jan. 21-31	Feb 1-10	Feb. 11-20	Feb. 21-28	Mar. 1-10	Mar. 21, 26-27	29-31	Apr. 1-10	Apr. 11-20	Apr. 21-29	May 1-2, 4, 8-10	May 21-22, 28-29	a Includes 0.03 parts per million of zinc

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June 4-5, 1955 June 11-12, 20 June 21-30 July 1-10 July 21-30	Aug. 1-10. Aug. 11-20 Aug. 21-31 Sept. 11-0 Sept. 11-20 Sept. 21-30	Time-weighted average b b Represents 90 percent of days.

### OHIO RIVER MAIN STEM--Continued

### OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 1:30 p.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	52	47	43	35	50	50	64		80	86	82
2	76	50	46	43	35	50	48	65		80	87	82
3	76	51	46	42	35	49	50		l	79	87	82
4	78	50		43	35	51	52	62	76	83		82
5	79	50	46	43	35	49	51	68	74	85	89	84
6	75	52	43	44		51	50			84		80
7	72	52	41	44		52	50			84	89	80
8	72	52	40	43	l	50	56	65	l	84	89	79
9	73	52	43	í	í	50	56	68	1	84	90	80
10	74	51	42	43		50	57	68		83	90	80
11	73	52	45	43	36	51	57	68	71	83	l 88	80
12	72	52	43		38	50	60	67	70	83	88	80
13	74	52	41		38	52	58	68		84	87	78
14	74	55	44	44	38	50	61	68		84	88	78
15	70	51	43	42	37	49	60	68		84	86	79
16		51	42	38	38	49	63	69		83	85	80
17	65	53	41	36	38	49	67	68	l	83	84	80
18	64	52	39	37	39	49	69	69	l	85	84	78
19	65	52	43	36	38	48	69	69	Ì	84	85	80
20	64	52	41	39	43	51	69	70	79	87	87	79
21	61	52	40	38	39	52	64	72	79	86	87	80
22	60	50	41	37	40	] ==	64	68	79	87	86	80
23	59	49	49	34	41		63		79	87	85	81
24	60	48	44	32	47		64	l	79	88	85	76
25	58	48	42	36	46		62		78	88	84	76
26	58	48	45	37	44	47	62		76	87	<u></u>	77
27	58	47	43	38	48	46	63		78	86		76
28	57	47	43	37	48		62	75	75	87	86	76
29	57	48	41	35		49	63	75	75	88	83	76
30	54	48	43	40		47	64		80	87	84	70
31	53		40	35		51					84	
Aver- age	67	51	43	39	40	50	60			85	86	79

### NORTH FORK KENTUCKY RIVER AT HAZARD, KY.

LOCATION.--At gaging station at Woodland Park bridge at eastern limits of Hazard, Perry County, 150 feet upstream from city waterworks dam, and 4.0 miles upstream from Lotts

Aver-

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County, 150 feet upstream from city waterworks dam, and 4.0 miles upstream from botto Creek.

DRAINAGE AREA. --466 square miles (revised).

RECORDS AVAILABLE. --Chemical analyses: November 1949 to August 1950.

Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 89°F July 27, Aug. 6-7; minimum, freezing point Jan. 29.

EXTREMES, 1949-55.--Water temperatures: Maximum, 93°F Aug. 1, 1953; minimum, freezing point Dec. 17, 1953, Jan. 29, 1955.

EMMARKS.--Daily water temperatures are averages of twice-daily measurements. Data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955  $\sqrt{T}$  wice-daily measurements at approximately 7 a.m. and 5 p.m.  $\sqrt{T}$ 

Day Oct. Nov. Dec. Jan. Feb. May July Sept. Mar. Apr. June Aug. 40 5 44 48 46 65 46 ĸЯ RO 48 52 76 FN 50 86 4R 73 

### KENTUCKY RIVER BASIN--Continued

## KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY

LOCATION. --At gaging station at Broadway Street Bridge, at Frankfort, Franklin County, 300 feet upstream from Benson Creek, and 0.9 mile upstream from lock 4, and at mile 65.9.

DRAINAGE AREA .-- 5,412 square miles (revised) including that of Benson Creek RECORDS AVAILABLE. -- Chemical analyses: October 1949 to September 1955

October 1949 to September 1955. Sediment records: October 1952 to September 1955. Water temperatures:

EXTREMES, 1954-55.—Dissolved solids: Maximum, 185 ppm Dec. 7-18; minimum, 67 ppm Mar. 25-26.

Hardness: Maximum, 126 ppm June 4 to July 3; minimum, 42 ppm Mar. 2.

Hardness: Maximum, 126 ppm June 4 to July 3; minimum, 42 ppm Mar. 2.

Specific conductance: Maximum daily, 420 micromhos Dec. 15; minimum daily, 2 ppm or several days during January and February.

Water temperatures: Maximum daily, 1,790 ppm July 10; minimum daily, 2 ppm on several days during September.

Sediment loads: Maximum daily, 1,790 ppm July 10; minimum daily, 1 ton on several days during September.

EXTREMES, 1994-55.—Dissolved solids: Maximum, 224 ppm Nov. 21.30; 1999; minimum, 67 ppm Mar. 25-26, 1955.

Hardness: Maximum daily, 555 micromhos Ppc. 7, 1955; minimum, 42 ppm May 10-13, 1955, minimum, 43 ppm May 10-13, 1953, minimum, 44 ppm May 10-13, 1955, minimum, 44 ppm May 10-13, 1955, minimum, 48 pp. 44, 1951.

Section: Maximum daily, 555 micromhos Dec. 7, 1955; minimum daily, 79.8 micromhos Peb. 4, 1951.

Section: Maximum daily, 1,790 ppm July 10, 1955; minimum daily, 1 ppm on several days during November, December 1953, Sectiment concentrations (1952-55): Maximum daily, 1,790 ppm July 10, 1955; minimum daily, 1 ppm on several days during November, December 1953,

Sediment loads (1952-55); Maximum daily, 208,000 tons Mar. 1, 1955; minimum daily, 1 ton on several days during November 1952, November 1953, August, and August 1954

REMARKS.—Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge including flow of Benson Creek REVIOW water year October 1954 to September 1955 given in WSP 1385. From regulated by Harrington Lake and by hydroelectric plant at lock 7 on Kentucky River. REVISIONS.—WSP 1350. Revised water temperatures for water year 1935-54 are given herewith: September 1954, and September 1955.

### Temperature ('F) of water

Date	Мах	Min	Date	Max	Min	Date	Мах	Min
Oct. 7 Feb. 15 Feb. 16	70 44 	4	Mar. 17 July 21 Aug. 10		882 80	Aug. 18 Aug. 26 Sept. 19	80	188

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		Color	œ	æ	œ	œ	rc.	rc.
		Hd	7.3	9.7	8.	-2.8	2.5	1.6
		ance (micro- mhos at 25°C)		231	257	264	274	264
	iess CO _s	Non- carbon- ate	66	24	34	30	2.2	28
	Hardı as Ca	Calcium, Non- mag- carbon- nesium ate	66	96	106	108	118	116
	Dissolved solids	(residue on evap- oration at 180°C)	138	143	156	157	152	148
200		(NO ₃ )	3.3	3.9	3.3	8.2	3.8	3.5
september	_	Fluor ide (F)	0.2	~!	~	1.	-:	~
, water year October 180% to September 1800	í	Chloride (CI)	9.6	11	11	18	14	14
year Octor	į.	(SO ₄ )	53	56	30	26	23	22
	Bicar-	bonate (HCO ₃ )	78	98	88	97	110	801
nemical analyses in parts per million	Potas-	Sium (K)	3.3	3.1	3.5	2.9	2.1	2.6
ses In par	6	(Na)	7.1	7.4	6.6	6.6	8.2	7.4
icai anaiy	Mag-	nestum (Mg)	5.3	5.4	6.4	6.5	0.0	6.5
Chem	Cal-	cium (Ca)	88	58	32	£	5	38
	1	(Fe)	0.01	.02	.02	10.	6.	10.
		(SiO ₂ )	8.4	8.2	8.9	5.5	0.9	5.1
	Mean	discharge (cfs)			403			1,394
		Date of collection	Oct. 1-14, 1954	Oct. 15-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30

						1
5 7 114 17	14 14 6 6 5	w e 4 ¦ e	15 20 17 20	7 8 17 18 18	10 t to 4 4	-
7.7. 7.5 7.5 7.5	7.5	7.3 7.1 7.0 7.2	7.1 6.9 7.0 7.2	6. 7. 7. 7. 4. 1. 4.	7. F. F. F. E. & E. & E. & E. & E. & E. &	1
274 347 219 178	117 185 215 218 202	178 199 155 99.6	177 115 153 102 167	195 204 190 165 201	268 234 225 243 247	224
38	32 33 33 33	25 20 13 13	27 21 19 17 23	28 22 38 8 29 29 29 29 29 29 29 29 29 29 29 29 29	22 23 28 28 28 28 28 28 28 28 28 28 28 28 28	27
110 119 81 76	46 77 92 88	80 90 71 70 70	78 52 67 43	84 48 72 78 84 78	126 102 107 115	96
154 195 120	79 112 127 128	106 120 90 79	104 80 90 67	113 127 112 100 118	159 143 137 144 143	133
& 2.4.70 & 8.8.4	4.0.0.4.0. L. 13.0.0.0.	4.0.6. 6.2.6. 0.0.0.	4.6.4.4.6. 6.8.6.1.7.	5.3 3.3 1.7 2.5	2.5.8 8.8.8 1.1.1	3.5
धं धं <u>कं</u> धं		2.4.4.1.4	w.   w.   w.	બં બં બં બં બં અ	બં બં બં બં બં અ	0.2
18 36 12 8.0	2.5 7.5 8.0 7.6	4.4 4.6 3.1 2.7	& 8 2 2 1 . 8. 4.0.8 8 . 8.	6.57.55.68 6.02.55	10. 10. 6.2 6.3	8.9
23 4 28 25 35 25 35	18 27 29 26	23 17 16 20	24 18 15 15	38 36 26 27	23 19 18 19 21	32
95 54 56	34 74 74 68	68 76 61 34	63 31 83 63	66 60 48 75 75	117 96 102 114	48
3.0	1.6	2.1.1.2		8.1 6.1 7.4 8.1	22.1.2	2.0
10 20 8.7 5.5	4 6 4 6 6 9 6 6 4 4	2.8 2.6 2.4 2.1	94408	8. 7. 4. 4. 9. 9. 9. 4. 4. 9. 9. 9. 7.	4 70 4 4 70 8 8 0 8 0	5.9
4.8.0.0	8.4.8 2.7.0 2.2.0 2.2	સ્તાય સ. 4. ભાષા સંસ્થે	7. 5. 5. 5. 5. 1. 8. 4. 4. 9.	6.1 6.1 5.3 5.2	8 2 4 5 5 8 2 4 5 5	5.8
35 24 19	13 23 24 26 26	26 28 21 11 21	23 16 13 25	25 20 20 17	32 32 44 35 35 35 45	68
0. 41. 01.	6.6.6.6.	33 11 11 13 13	80 III 80	2888	28888	0.05
4.8 8.8 0.7 0.7	8.6.3. 8.6.3. 8.3. 1.3.	2.8.7.8. 8.0.6.4.	8.8 7.2 7.2 7.2 7.2	2.7. 2.7. 2.7. 7.1. 7.5	20 20 20 20 20 20 20 20 20 20 20 20 20 2	6.7
2,353 4,870 10,350 7,679	11, 900 7, 050 5, 386 5, 614 15, 570	9,866 20,360 41,670 76,900 73,000	28, 310 55, 500 64, 670 49, 550 12, 280	5,016 4,315 8,848 3,363 2,197	1,620 4,770 1,267 508 286	6,798
Dec. 1-6, 1954 Dec. 7-18 Dec. 19-22 Dec. 24-31	Jan. 2-5, 1955 Jan. 6-9 Jan. 10-14, 16-20. Jan. 21-31 Feb. 1-8	Feb. 12-18 Feb. 19-25 Feb. 28-27, Mar. 1 Mar. 3. Mar. 5-8.	Mar. 11-14, 16-18 Mar. 20-21. Mar. 22-24. Mar. 25-26. Mar. 27-31.	Apr. 1-10. Apr. 11-24 Apr. 25-30 May 1-20 May 21-June 3	June 4-July 3	Time-weighted 6,798

a Represents 95 percent of days and 82 percent of runoff.

KENTUCKY RIVER BASIN--Continued KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

Temperature (°F) of water, water year October 1954 to September 1955

١																																	ļ	1
	mber	uţw	1.1	77	92	92	16	75	92	22	75	22	74	73	72	73	73	73	73	72	72	72	72	15	2 2	2	7.	2	2	2	69	69	:	73
	Septembe	max	78	77	77	77	16	92	92	77	92	92	15	74	73	73	73	73	74	74	74	72	72	72	2.5	72	7.5	11	2	2	20	02	:	74
	ust	այա	91	92	92	77	18	62	8	8	8	43	7.1	1	92	92	92	92	92	7.7	48	48	80	8	8	8	80	19	18	28	18	28	٥	28
	August	max	77	92	77	48	43	80	81	81	81	81	80	48	77	16	92	16	77	18	18	80	80	81	83	80	80	80	43	48	28	62.	ß	2
	y.	min	92	92	77	77	482	43	62	72	72	73	74	7.	74	75	16	75	74	74	74	75	75	92	9.	9.	75	16	16	16	16	16	9	22
	July	тах	77	77	77	78	80	80	8	8	29	92	75	22	75	92	92	92	12	74	15	92	92	92	9 1	9.	9.	92	92	92	92	92	=	=
	e	min	11	2	2	20	20	73	73	72	72	2	69	89	99	99	99	89	89	2	2	7	71	12	7.5	74	7.4	74	74	22	74	75	:	7.1
	June	max	72	7	2	2	73	74	74	73	72	72	7.1	69	89	99	89	02	2	20	71	12	72	72	4	74	74	74	91	92	72	92	:	72
	y	min	64	2	64	49	99	99	99	99	99	99	99	99	99	67	65	92	65	65	99	29	89	69	8	2	20	72	73	7.	2	2 2	=	29
	May	max	64	25	49	99	99	99	99	29	67	67	99	99	29	2.9	67	65	65	99	89	89	69	69	1	2	72	15	74	74	7.4	25	2	89
aph/	1	min	47	47	48	48	49	51	25	21	25	25	24	54	22	26	26	57	22	28	29	09	19	62	62	29	63	62	62	62	62	63	:	26
ermogr	April	max	47	48	48	49	51	52	25	25	25	54	54	22	99	26	24	28	28	29	99	61	63	63	25	8	8	63	62	62	63		:	22
Continuous ethyl alcohol-actuated thermograph/	ų:	ulm	47	48	48	49	20	52	21	2	48	48	48	48	48	49	48	20	52	53	22	21	20	20	2	2	21	20	48	47	46	46	£	49
hol-act	March	max	48	48	49	23	22	52	25	21	20	48	48	48	49	49	20	52	. 65	53	53	52	51	25	25	21	22	51	20	48	47	41	4	20
nyl alco	ıry	min	37	37	38	37	37	37	88	40	40	41	42	42	41	40	40	40	40	40	40	9	\$	\$	41	£3	<b>£</b>	44	44	45	;	!	:	40
uous etl	February	max	37	88	38	38	37	38	40	40	7	42	42	42	42	41	4	40	. 4	41	40	40	40	41	43	£3	4	4	45	47	:	:	:	41
/Contin	ry	min	41	41	42	45	46	46	46	46	46	46	45	44	44	43	43	45	. 2	42	42	42	41	41	1	<del>\$</del>	40	39	39	88	38	8 8	30	42
	January	max 1	44	45	45	46	46	47	47	46	46	46	46	45	44	44	43	43	42	42	42	42	42	41	7	41	40	4	40	39	39	38	*   *	43
	per	min	48	48	8	47	47	46	46	44	44	44	44	43	43	43	43	45	42	42	40	40	40	<del>-</del>	<b>4</b> :	40	40	40	40	4	42	£ ;	43	43
į	December	max	49	48	48	48	47	47	46	46	44	44	44	44	43	43	43	43	42	42	42	40	40	\$	<b>\$</b>	40		40	40	42	43	43	44	43
	ner.	min	61	29	21	99	22	54	54	54	54	54	22		20	22	22	4	- 4	54	54	24	25	54	24	54		51	20	- 20	6		;	54
	November	шах п	19	61	28	22	26		_		54		26	26	26	20	22		_		54		54	45	2	54	25	_	21				$\dashv$	22
	Jer.	min m	73	2	74	22	22	74	72	20	12	12	71	11	72	73	7.1	69	. 89	29	99	99	65	65	9	64	4	64	65	65	8	62	10	69
	Octobe	max n	74	74	- 22	15	75	75	74	72	11	11	72	72	73	23	73	- 12	69	89	67	 99	99	65	92	65	<u>z</u>	65	8	65	65	8 8	70	- 69
		Ŀ	:	:	-	-	:	:	:	:	:	:	-:	-	:	-	:		:	:	:	:	-:	:	:	<del>-</del>	:	_	:	-	:	<del>-</del>	_ :	<u> </u>
	Dag	LAS	1	2		4	5	6	T		9.	10	11	12	13	14	15	16.	17	18	19	20	21	22	23.	24.	25	26	27	28	29	30	т.	Average

### KENTUCKY RIVER BASIN

### KENTUCKY RIVER BASIN -- Continued

### KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955

		October			November			December	
	Mean	_	d sediment	Mean	Suspende	ed sediment	Mean	Suspende	d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	987	28	75	316		e 45	1,880	12	61
2	1,080	28	82	340		e 45	2,860	5	39
3	924	46	115	353	52	50	2,650	7	50
4 5	945 924	57 57	145 142	353 488	44 44	42 58	1,980 1,850	4 7	21 35
*******	""	**	172	400	**	30	1,000	•	""
6	764	53	109	470	52	66	2,900	15	117
7 8	578 745	52 51	81 102	578 669	37 43	58 78	3,980 4,630	7 4	75 50
9	840	44	100	840	87	197	4, 460	4	48
10	688	45	84	903	81	197	3,740	a a	40
11	640	47		040	404		0.000	١.,	105
11 12	542 418	36	69 41	840 707	104 30	236 57	3,860 4,420	13 23	135 274
13	444	42	50	632	26	44	4,800	31	402
14	542	57	83	560	26	39	4,500	16	194
15	1,150	<b>95</b> 0	sa 3, 200	560	25	38	5, 170	11	154
16	688	272	505	488	8	10	6,780	42	769
17	418	152	172	444	12	14	6, 120	74	1,220
18	340	114	105	405	15	16	5, <b>9</b> 80	56	904
19 20	578 669	82 53	128 96	418 596	23 60	26 sa 110	10,700 13,700	158 315	s 4,820 11,600
				1		54.110	1		
21	578	39	61	1,150	139	432	10,500	268	7,600
22 23	488 431	47 49	62 57	945 1,050	50 19	128 54	6, 490 4, 670	176 140	3,080 1,760
24	488	35	46	1,410	8	30	3,580	113	1,090
25	332	27	24	1,500	5	b20	2,940	87	691
26	379	30	b30	1,470	5	20	2,510	64	434
27	353	32	30	1,470	14	b 55	2,170	75	439
28	392	40	42	1,520	33	135	3,510	98	s 987
29 3 <b>0.</b>	366 340	52 45	51 41	1,640	30 27	b 130	6,820	77 213	s1,740
31	284		e 35	1,790		130	14,900 25,000	870	8,570 58,700
Total .	18,695		5,963	24,905		2,560	180,050		106,099
		January	<u>'===</u>		February			March	
1	30, 300	1,480	121,000	3,090	10	83	66,300	1,160	200 000
2	23, 300	1,100	69,200	3,280	9	80	73,500	1,100	208,000 202,000 178,000
3	10,400	354	s 10,500	3,980	8	86	76,900	855	178,000
4 5	6,950 6,950	172 143	3,230	5,220	7	99	77,200	670	140,000
••••••	0, 550	143	2,680	7, 480	15	s 359	81,800	565	125,000
6	7,390	122	2,430	24, 100	330	s 23, 300	81,400	575	126,000
7 8	7,390	117 106	2,330	38,500	890	92,500	68,900	588 565	109,000
9	7,130 6,290	83	2,040 1,410	38,900 40,300	750 710	78,800 77,300	59,900 57,200	450	91,400 69,500
10	5,980	53	856	32, 100	675	77,300 58,500	49,600	488	65, 400
11	5,810	50			405		00.000	•••	94 800
12	5,810 5,850	50 44	784 659	16,500 11,700	605 224	27,000 7,080	26, 200 13, 400	300 308	21,200 11,100
13	5,550	35	524	9.860	90	2,400	11,300	198	6,040
14	5,720	30	463	8,400 7,710	77	1,750	10,100	142	3,870
15	5,550	27	404	7,710	60	1,250	13,400	270	b9,800
16	5,430	22	322	7,890	57	1,210	29,800	488	s 40,800
17	5,340	22	317	10,800	54	1,570 1,540	44,600	1,330	160,000
18 19	5,220 4,800	19 17	268 220	12,700 13,000	45 57	1,540 2,000	48, 800 54, 300	1,060 820	140,000 120,000
20	4, 460	14	168	11,800	43	1,370	53,700	578	83,800
91	4 200	١		1			, i		·
21 22	4, 100 4, 220	14	155 102	12,000 26,200	46 270	1,490 19,100	57,300 71,500	355 415	54,900 80,100
23	5,590	8	121	29,000	522	40,900	64, 100	502	86,900
24	7,570	12	245	24,100	238	15,500	58,400	462	72,800
25	8,640	17	396	26, 400	170	12, 100	56,700	640	98,000
26	8,030	19	412	26, 400	141	10,000	42,400	425	48,600
27	6, 470	12	210	32,300	352	s 34,000	17,800	364	17,500
28 29	5,260	10 12	142	54, 400	1,410	207,000	12,800	241 157	8,330
30	4, 460 3, 900	13	144 137				11,600 10,200	102	4,920 2,810
31	3,510	12	114				9,020	86	2,090
Total.	227, 260		221,983	538,110		718, 367	1,410,120		2,387,860

e Estimated. s Computed by subdividing day.

^{-- 718, 367 | 1, 410, 120 | -- 2, 387, 860}a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

### KENTUCKY RIVER BASIN -- Continued

### KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

	r		Dominione, 1	laces year or	CCODC1 1001	о верисине:	1aaa-Cont	unucu	
	ĺ	April		ii	May		í	June	
			d sediment			d sediment		Sugranda	d sediment
	Mean		u seulment	Mean		u seument	Mean		a sculment
Day	dis-	Mean			Mean	_		M€an	l _
24,		concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge		per	charge		per	charge		per
	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tration	day
	, , , , , ,	(ppm)	, uni	(0.0)	(ppm)	uay	(555)	(ppm)	المسا
1	7 040		1	2 040		440			
1	7,940	52	1,110	7,040	22	418	1,580	32	136
2	7,080	38	726	5,510	17	253	1,080	29	84
3	6,510	25	439	4,460	17	205	924	34	85
4	5,010			2,200					
4	5,900	23	366	3,740	19	192	802	30	65
5	4,670	24	303	3,090	19	158	726	25	b 50
	_,			-,		200	1		
6	4 500		أسمدا						
6	4,500	35	425	2,610	16	113	614	22	36
7	4, 220	22	251	2,300	15	93	783	21	s 47
8	3, 240	17	149	1,820	14	69	1,700	97	445
0	0,540			1,020			1,100		
9	3, 240	12	105	1,700	18	83	1,940	92	482
10	2,860	14	108	1,550	16	67	2,200	106	630
		1		, , , , , ,					
11	2,900	14	110	1,470	12	48	3,900	138	1,450
10	2,800						3,800		
12	3,360	15	136	1,220	7	23	4,670	133	1,680
13	3,470	17	159	2,170		e 800	3,620	83	811
14		15	127		250		9,050		535
17	3,130			4,340		a 2, 900	3,050	65	
15	3,620	19	186	4,180	208	2,350	2,900	60	470
	l	I	ı I	1		'	1		
16	4,880	23	303	5,430	. 82	1 2000	2 240	40	253
177						1, 200	2,390		
17	6,820	23	424	5,470	30	443	2,340 1,850	31	155
18	6,640	21	376	4,060	20	219	1,440	30	117
19	5 720	15		2 000					
10	5,720		232	2,900	22	172	1,120	32	97
20	4,540	12	147	2,200	24	142	987	90	240
	1	I	i l				l I		
21	3,900	12	126	1 790	25	117	987	75	200
20	3,800			1,730		111			
22	3,430	10	93	1,730	18	84	802	44	95
23	3,740	10	101	1,730	14	65	882	24	57
24	4 260	7		1,700	10				
24	4, 260		80	1,700	13	60	506	26	36
25	4,630	7	88	2,540	14	96	1,050	25	71
	1	Į.	1 1	· .				1	
26	7,080	15	287	9 170	13	76	1,700	23	106
90				2, 170			1,700		
27	9,510	49	1,260	1,700	18	83	1,360	23	84
28	11,300	53	1,620	1,550	18	75	1,380	19	71
29	11,400	47	1,450	4,960	21	281	1,280	17	59
90	11,200			4,900			1,200		
30	9,170	25	619	5,090	32	440	1,220	15	49
31	l	1		2,270	28	172			
	100 000		14 000				10 000		0.000
Total .	163,660		11,906	94,430		11,497	49,393		8,696
		July	1	ł	August			Septe mber	
	1,080		400	1 000		900	0.40		90
1		16	47	1,380	72	268	340	28	26
2	945	17	43	1,380	48	179	332	25	22
3	764	17	35	1,250	60	202	225	25	15
4	1,300	17	60	1,200	46		260		e 15
	1,300			945		117			
5	2, 100	17	96	945	46	117	260		e 13
		1	1 1						
6	1 550	17	l ъ70 l	1 100	50	h 150	225		- 10
	1,550			1,120		b 150			e 10
7	966	18	b 45	861	50	b120	260		e 10
8	9,150	383	s 18,800	1,700	49	225	260	14	10
9	16,800	658	s 18,800 s 35,000	1,640	42	186	260	18	13
10		1 700	200,000	1,020					
10	25,300	1,790	122,000	3,470	47	440	260	18	13
	I	1	1 1				1		
11	20, 400	1,760	96,900	2,400	52	337	260	15	10
12	11,800	641	20,400		47	255	260	17	12
	11,000		20,400	2,010					
13	5,300	425	6,080	1,330	45	162	260	11	8
14	3,130 2,340	468	3,960	764	64	132	260	6	4
15	2 340	595	3,760	688	41	76	260	5	4
	2,010	""	3,100	000	41	, ,	000	,	7
	l _	I .	1						
16	2, 140	575	3,320	745	24	48	260	6	4
17	1,470	405	1,610	745	12	24	260	7	5
10	1,710		1,010						
18	2,420	373	2,440	650	8	14	260	11	8
19	2,230	319	1,920	783	17	36	260	5	4
20	2,100	246	1,390	821	18	40	276	2	ī
	L 2, 100	2.0	1,000	140	10	<b>∓</b> 0	2.0	-	•
0.1		1 .	1				l		
21	1,880	236	1,200	861	18	42	405	2	b 2
22	1,700	162	744	861	20	46	444	2	2
23	1,100			001			233		-
23	1,360	138	507	1,200	11	36	405	2	2
24	1,380 2,510		e 600	861	10	23	306	2	2 2
25	2,510		e 1,300	783	15	32	292	2	2
20	i 2, 5.5	i	-1,000	100	13	32	4 44	- "	-
9.0			1 (						
26	2,540	132	905	764	23	47	260	2	1
27	2,010	95	b500	726	15	29	253	2	1
28	2,010								
80	2,830	83	634	392	13	14	239	6	4
29	2,860	81	625	470	14	18	190	7	4
30	2, 270	69	423	945	22	56	308	10	8
31	2,270 1,730	77	360		28	36	300	10	
				470	40				
Total .	136, 355		325,774	33,960		3,507	8,402		235
		<del></del>							
	iccharge for	r weer lote-	dave)						2 885 340

 Total discharge for year (cfs-days)
 2,885,340

 Total load for year (tons)
 3,804,447

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated concentration graph. b Computed from estimated concentration graph.

## KENTUCKY RIVER BASIN--Continued

# KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY. -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, decantation: P, pipette; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

:	Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM	BSNM	T. O'MO'	DOM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	***************************************	PSNM	BSWCM	BSWCM	BSWCM	BSWCM
		1.000																		
		0.500																		
		0.350																		
	llimeters	0.250	100	8	100	66	6	5	3	901	!	100	100	100	-	3	100	9	!	:
	ze, in mi	0, 125	26	66	86	86	6	8	B	66	100	66	66	66		20	66	66	100	:
	Percent finer than indicated size, in millimeters	0.062	96	86	94	96	94	5	2	86	66	66	97	97	Ş	5	8	86	66	100
ediment	ner than ir	0.031	96	26	88	91	8	ē	70	93	8	8	83	84	8	3	83	97	06	86
Suspended sediment	Percent fü	0.016	06	82	16	19	74	ŭ	3	83	81	78	82	83	5	3	81	88	75	98
ß		0,008	8	74	62	67	22	ē	2	69	67	8	67	67	;	8	89	2	57	72
		0.004	62	62	24	53	\$		5	8	51	42	53	23	,	49	23	22	49	26
		0.002	49	53	43	38	22	:	7	38	41	39	ස	8	;	2	40	40	40	42
	Concentration of suspension	analyzed (ppm)	1, 210	670	1,060	1,270	1, 170		1,210	:	1,100	2, 290	1.440	1,860		1,940	1, 230	2, 110	1,180	1,750
	entra	of sample (ppm)	1,060	420	999	199	189		1,480	675	614	1,590	944	876	į	876	727	1,480	1,260	1,800
Water	tem- per-	ature (°F)																		
	Discharge (cfs)		1,030	13, 400	23, 400	25,000	25,000		31,00	33,300	28,800	54,700	73, 500	77,000						20,000
	Time		2:00 p.m.	5:30 p.m.	8:00 a.m.	12:10 p.m.	12:10 p.m.		2:00 p.m.	11:00 a.m.	12:30 p.m.	10:30 a.m.	3:20 p.m.	1:10 p.m.	,	1:10 p.m.	8:10 a.m.	12:05 p.m.	12:05 a.m.	1:30 p.m.
	Date of collection	•	Oct. 15, 1954	Dec. 20	Dec. 31	Dec. 31	Dec. 31		Jan. 1, 1935	Feb. 10 a	Feb. 23	Feb. 28	Mar. 2	Mar. 3		Mar. 3	Mar. 4	Mar. 17	July 9	July 11 1:30 p.m.

a Average of individual analyses of samples from 4 verticals in stream cross section.

### KENTUCKY RIVER BASIN -- Continued

### EAGLE CREEK AT GLENCOE, KY.

LOCATION. --At gaging station at bridge on State Highway 16 at Gallatin-Owen County line, half a mile south of Glencoe, Gallatin County, 5.9 miles downstream from Tenmile Creek, and 22 miles upstream from mouth.

DRAINAGE AREA. --438 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55. --Water temperatures: Maximum, 90°F Aug. 20; minimum, freezing point on several days during December to February.

EXTREMES, 1949-55. --Water temperatures: Maximum, 93°F Sept. 1-2', 1953; minimum, freezing point on many days during winter months.

REMARKS. --Daily water temperatures are averages of twice-daily measurements. Data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

			7 I wice.	daily mea	tsurement	s at appr	oximatery	6 a.m. a	na o p. m	<u>·/</u>		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72		39	46	34		48	64	68	79	84	74
2	74	40	38	48	32		50	66	68	82	86	72
2 3	76	40	36	47	31		55	64	67	82	85	78
4	76	41	37	50	31		51	67	68	80	83	82
5	77	42	36	56	32		59	68	70	81	86	84
6	67	42	32	47	36		55	68	70	81	85	84
7	57	43	32	44	34		52	68	66	82	85	76
8	62	43	33	45	36		54	59	66	79	84	82
9	65	43	35	44	44		56	58	65	80	85	82
10	70	42	34	40	48		60	64	64	82	84	80
11	71	40	36	40			53	62		78	78	77
12	72	42	34	34	!		59	62	62	83	81	74
13	74	43	33	32			62	66	61	86	72	74
14	73	42	35	32			61	62	63	84	70	76
15	59	42	36	34			62	64	64	78	70	78
16	56	46	35	34			62	64	64	77	74	78
17	60	48	36	34			65	60	66	77	84	80
18	57	50	34	33	!		65	58	70	77	85	80
19	52	48	32	32			68	58	76	77	86	80
20	51	46	33	32			70	67	78	80	88	81
21	49	45	35	33		56	62	69	73	81	86	82
22	51	44	38	33		53	65	71	74	81	84	78
23	54	42	42	32		43	66	70	73	80	82	70
24	58	.42	46	31		46	60	70	75	80	78	74
25		40		31		44	58	67	77	78	77	74
26		40	46	31		43	54	69	70	82	78	71
27		39	48	31		41	52	72	72	82	78	74
28		40	50	31		40	54	69	72	82	78	72
29		36	44	31			58	68	74	82	78	72
30		38	40	31		41	61	66	76	82	78	67
31			41	31		46		64		82	79	<u> </u>
Aver- age		42	38	37			59	65	69	81	81	77

### PLUM CREEK AT WATERFORD, KY.

LOCATION.--At gaging station 0.7 mile downstream from Little Plum Creek, 1.0 mile north of Waterford, Spencer County, and 3.2 miles upstream from Salt River.

DRAINAGE AREA.--31.9 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1955.

Sediment records: October 1954 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 90°F July 15, 16; minimum, freezing point on several days during January and February.

Sediment concentrations: Maximum daily, 2,290 ppm July 16; minimum daily, no flow on many days during August and September.

Sediment loads: Maximum daily, 6,030 tons Feb. 27; minimum daily, no flow on ming August and September.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385. Flow affected by ice Jan. 28.

Temperature (°F) of water, water year October 1954 to September 1955

				/Once-	daily mea	surement	at varyin	g hours/				·
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		42	44	45	43	48	48	71	82	84	89	
2	80	38	38	45	39	47	48	72	82	84	89	
3	80	45	38	40	34	48	48	72	82	85	89	
4		44	34	40	39	48	49	73	82	85	89	
5	72	46	40	40	41	48	49	73	82	85	89	
6	70	40	36	45	44	47	49	73	83	85	88	
7	52	50		40	46	47	49	74	84	83	85	
8	66	52	35	44	l	47	51	73	83	84	85	1
9		55		46	44	48	54	73	83	85	86	ſ
10	75	54	40	44		49	56	73	83	85	86	
11	76	54	40	34	33	49	59	73	82	88	86	1
12	78	55	38	34	32	49	59	74	82	89	86	
13	70		32	32	33	47		74	83	89	87	
14	72	57	40	32	34	49	60	73	80	89	86	1
15	59	55	39	34	40	49	60	73	79	90	86	
16	58	55	40	41	46	48	61	79	82	90	87	
17	60	60	40	38	44	48	61	79	82	82	86	1
18	60	60	39	32	46	48	62	79	82	86	87	1
19	58	55	35	34	45	49	70	81	82	86	87	1
20	57	45	34	34	47	49	70	81	83	88		
21	57	49		40	45	49	69	81	83	88		
22	59	45	35	36	46	46	71	79	83	88	87	1
23		45	40	32	47	47	72	81	83	86	86	
24	65	45	35	40	47	48	70	81	83	87	86	1
25		40	40	40	47	48	69	80	82	85		
26	64		40	42	45	37	69	81	84	87		
27	60	40	40	34	48	46	70	81	84	88		I
28	55	40	40	34	48	47	71	81	84	87		1
29	50	38		32		47	71	81	83	88		1
30	40		40	32		48	70	81	84	87		87
31	46		40	43		48		81		88		01
Aver- age	63	48	38	38	42	48	61	77	83	86		

26.....

27. . . . . .

28. . . . .

29. . . . .

30. . . . .

31. . . . . .

Total.

1.4

5. 4 2. 6

2.6

208.3

13

31

24

23

9

e 1

(t)

424.6

. 2

2

. 1

### SALT RIVER BASIN -- Continued

### PLUM CREEK AT WATERFORD, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955 October November December Suspended sediment Suspended sediment Suspended sediment Mean Mean Mean Mean Mean Maan Day dis-Tons dis-Tons dis-Tons concenconcenconcencharge per day charge charge per day per tration tration tration (cfs) (cfs) . day (cfs) (ppm) (ppm) (ppm) 0.9 1. . . . . 1 4 5 2,8 9 0.1 2. . . . . 5 2.1 4 2.4 7 3..... . 6 (t) 1.6 2 5 (t) 4. . . . . . 4 . 3 9 1.6 2 5. . . . . 8 1.4 1 46 s1.9 35 1,030 s137 1.2 5 2 2 5.2 27 7. . . . . . 2. 1 s 2. 6 1.2 3.1 8.9 e.2 8. . . . . . 1.0 154 1.0 -e 3 9. . . . . .7 83 40 . 2 . 9 1 e9 10. . . . . 15 . 1 . 8 (t) 15 . 6 11..... . 5 30 (t) . 8 1 9,8 10 . 3 3.5 12. . . . . e ÌÓ ī e 30 . 8 42 --13. . . . . . 11 **46** 550 sa 19 e 170 1 108 e70 14. . . . . . 8 2 5 29 25 s 2.1 15. . . . . 59 300 sa 80 . 8 20 11 . 6 11 16. . . . . 87 2.6 . 8 3 14 12 7.0 36 17. . . . . .7 .7 3.4 17 18..... . 6 16 5 . 2 19. . . . . 2.4 6 4.4 46 20 0.5 14 5 . 2 20. . . . . 1.8 2 10 . 2 . 1 2 21..... 1.4 2.4 1.6 3 8.4 3 47 22. . . . . 1.1 --(t) 6.8 7 (t) 23..... 1.0 1.4 2.8 7.3 5 24..... 12 6.4 4.7 2 2 e.1 25. . . . . . 8 2.4 23

2, 1

8.4

4.7

68.4

20

20

18

10

(t)

s2,730

e1,700

s 43

**b7** 

4,601.4

2

17

1,390

179

60

4.2 7.6

507

406

76 40

1,438.8

. 1

. 2

. 1

3.9

e 2

		January			February		1	March	
1	36	33	3.2	18	10	s1.4	322	2,170	s 3, 420
2	31	46	3.8	67	220	s 47	78	68	14
3	30	32	2.6	18	61	3.0	59	49	7.8
4	66		e 55	16	35	s 1. 3	84	622	s 266
5	108	110	sa 40	578	703	s1,970	257	1,510	s1,290
6	55	27	4.0	859	950	sa 2, 400	115	172	s 36
7	34	17	1.6	108	92	s 34	61	45	7.4
8	28	12	.9	50	30	4.0	44	30	3.6
9	25	11	.7	40	32	3.4	34	22	2.0
10	22	10	. 6	40	25	2.7	28	15	1.1
11	24	8	. 5	43	28	s 3. 0	34	134	s 16
12	25	8	.5	24	20	s1.1	26	140	ь 10
13	27	8	.6	26	17	1.2	18	42	2.0
14	22	8	. 5	29	12	.9	18	16	.8
15	53	42	s9.1	30	15	1.2	219	1,130	668
16	40	27	2.9	83	197	s 66	97	130	s 53
17	29	13	1.0	57	80	s14	50	64	8.6
18	24	7	. 4	40	30	3.2	48	25	3.2
19	21	7	.4	33	11	1.0	37	20	2.0
20	18	8	. 4	35	20	s 3, 1	110	220	s 251
21	46	43	s9.0	947	1,200	sa 3, 800	805	650	sa 2, 300
22	62	69	12	328	260	sa 500	188	143	s 96
23	32	19	1.6	81	47	10	70	45	8.5
24	24	12	. 8	55	25	3.7	48	21	2.7
25	20	7	. 4	41	14	1.5	.40	24	2.6
26	16	10	. 4	414	528	s1,110	30	13	1.0
27	11	14	. 4	690	1,560	s6,030	23	8	. 5
28	9	5	.1	351	1,640	s 2, 030	24	13	.8
29	12	5	.2		·		21	11	b.6
30	11	3	.1				18	5	. 2
31	9.8	2	. 1		l <u></u>		15	12	. 5
Total.	970.8		153.8	5, 101		18,046.7	3,021		8,475.9
e Ecti	matad								

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.
a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

### SALT RIVER BASIN

### SALT RIVER BASIN--Continued

### PLUM CREEK AT WATERFORD, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		April			May	to septembe	1	June	
	<u> </u>		d sediment			d sediment			d sediment
Day	Mean dis-	Mean		Mean	Mean		Mean	Mean	Γ
24,	charge	concen-	Tons per	dis- charge	concen-	Tons per	dis- charge	concen-	Tons per
	(cfs)	tration (ppm)	day	(cfs)	tration	day	(cfs)	tration	day
1	14	(ppm) 8	0.3	16	(ppm) 5	0.2	5.5	(ppm) 18	0, 3
2	13	5	. 2	14	5	.2	4.5	18	.2
3	9.1	5	.1	11	5	.11	3.5	20	b.2
4 5	8.4	2 2	(t) (t)	8. 4 5. 8	5 5	.1	2.5	18	.1
<b>9.</b>			(6)	3.0	3	.1	2	12	.1
6	48	111	s168	3.8	5	.1	3	8	.1
7 8	17 11	156 48	7.2 1.4	2.8 2.4	3 8	(t)	160 80	830	358
9	10	13	.4	1,6	18	.1 .1	80 35	222 40	48 3, 8
10	9.1	12	.3	1.4	19	.1	30	30	2,4
11	48	96	s 17	2.4	80				
12	36	100	sa 14	3.1	20 20	b.1	30 100	165 285	13 77
13	50		e 50	175	. 600	sa 950	60	37	6.0
14 15	27 20	70 17	5.1	177	360	sa 650	30	17	1.4
10,		17	.9	32	25	2.2	22	22	1.3
16	18	15	.7	20	8	.4	18	10	. 5
17	15 12	13 22	. 5	18	4	. 2	15	7	. 3
18	9.8	15	.7	9.8 6.4	4 7	.1	12 10	5 5	. 2 . 1
20	7.7	12	. 2	4.2	3	(t) · · ·	8	5	:1
	13	13			_				
21 22	10	11	.4	4.9 14	2 108	(t) s 8, 0	4.5 2.5	6 13	.1
23	177		e1,600	13	89	s 4.0	1.1	10	(t) 1
24	655	963	s 3,770	117		e 900	2.1	10	.1
25	78	76	16	148		e 900	8.0		e 2
26	63	33	5.6	20	127	s7.4	5.8		e 1
27	43	18	2.1	12	21	.7	2.4	13	.1
28 29	31 25	13 9	1.1 .6	32 28		e 45	1.2	11	]
30	19	8	.4	28 11	350 150	sa 30 4, 4	.9 .6	14 19	) (t)
31				7.0	57	ī. ī			
Total.	1,508.1		5,664.0	922.0		3, 505.1	660.1		516.6
		July			August			September	
1,	0.4	July 17	h	5.2	August 8	0.1	0	September	
1	. 3	17 16	(1)	5. 2 3, 1	8 7	0.1 .1	0	September	0
2 3	.3 .2	17 16 32	(t)	3, 1 2, 1	8 7 14		0	September	0
2	.3 .2 .2	17 16 32 43	]	3, 1 2, 1 1, 2	8 7 14 7	.1	0 0 0	September	0 0 0
2 3 4 5	.3 .2 .2 .5	17 16 32 43 52	0.1	3, 1 2, 1 1, 2 , 9	8 7 14 7 6	.1	0 0 0	September	0 0 0 0
2	.3 .2 .2 .5	17 16 32 43 52	0. 1 (t)	3, 1 2, 1 1, 2 .9	8 7 14 7 6	.1	0 0 0 0	September	0 0 0 0
2	.3 .2 .2 .5 .5 21	17 16 32 43 52	0. 1 (t) s 66 s 30	3, 1 2, 1 1, 2 , 9	8 7 14 7 6	.1	0 0 0	September	0 0 0 0 0
2	.3 .2 .2 .5 .5 21 16	17 16 32 43 52 30 962 612	0. 1 (t) s 66 s 30 e 50	3, 1 2, 1 1, 2 .9 .8 .8 .9	8 7 14 7 6 7 14 15	.1	0 0 0 0 0	September	0 0 0 0 0 0
2	.3 .2 .2 .5 .5 21	17 16 32 43 52 30 962 612	0. 1 (t) s 66 s 30	3, 1 2, 1 1, 2 . 9 . 8 . 8	8 7 14 7 6 7 14 15	.1	0 0 0 0 0	September	0 0 0 0 0
2	.3 .2 .5 .5 21 16 14 26	17 16 32 43 52 30 962 612	0.1 (t) s 66 s 30 e 50 e 80	3,1 2,1 1,2 .9 .8 .8 .9 .4	8 7 14 7 6 7 14 15	.1 .1 (t)	0 0 0 0 0 0	September	0 0 0 0 0 0
2. 3	.3 .2 .5 .5 21 16 14 26	17 16 32 43 52 30 962 612  325 175	0.1 (t) s66 s30 e50 e80	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4	8 7 14 7 6 7 14 15 15 30	.1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0
2. 3	.3 .2 .5 .5 .5 21 16 14 26 3.5 1.2	17 16 32 43 52 30 962 612  325 175 68	0.1 (t) s66 s30 e50 e80	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 .4	8 7 14 7 6 6 7 14 15 15 30 13 18	.1 .1 (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0
2. 3	.3 .2 .5 .5 21 16 14 26	17 16 32 43 52 30 962 612  325 175	0.1 (t) s66 s30 e50 e80	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4	8 7 14 7 6 7 14 15 15 30	.1 .1 (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .16 14 26 3.5 1.2 .7	17 16 32 43 52 30 962 612  325 175 68 66 138	0.1 (t) s66 s 30 e 50 e 80 3.1 1.0 .1 .1 2.6	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 .4 6.4 2.1 .8 .4	8 7 14 7 6 7 14 15 15 30 13 18 15 15	e 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .5 21 16 14 26 3.5 1.2 .7 7.0	17 16 32 43 52 30 962 612  325 175 68 66 138	0.1 (t) \$66 \$30 \$50 \$80 3.1 1.0 .1 2.6	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 .4 .8 .1 .8 .4 .3	8 7 14 7 6 7 14 15 15 30 13 18 15 15 15 15	.1 .1 (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .16 14 26 3.5 1.2 .7	17 16 32 43 52 30 962 612  325 175 68 66 138	0.1 (t) s66 s30 e50 e80 3.1 1.0 .1 .1 2.6	3.1 2.1 1.2 .9 .8 .9 .4 .4 2.1 .8 .4 .3	8 7 14 7 6 7 14 15 15 30 13 18 15 15 10 10	e 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .5 .1 14 26 3.5 1.2 .7 7 7.0	17 16 32 43 52 30 962 612  325 175 68 66 138 2,290 1,040 1,950	0.1 (t) s66 s30 e50 e80 3.1 1.0 .1 2.6 s923 s83 s3,170 sa600	3.1 2.1 1.2 .9 .8 .9 .4 .4 2.1 .3 .3	8 7 14 7 6 7 14 15 15 30 13 18 15 15 15 15	e 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .5 .1 14 26 3.5 1.2 .8 7.0	17 16 32 43 52 30 962 612  325 175 68 138 2,290 1,040 1,950	0.1 (t) \$66 \$30 \$50 \$80 3.1 1.0 .1 .1 2.6 \$923 \$83 \$3,170	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 .4 .3 .3	8 7 14 7 6 6 7 14 15 15 30	e 2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	.3 .2 .5 .5 .1 14 26 3.5 1.2 .8 .7 7.0	17 16 32 43 52 30 962 612  325 175 68 66 1,040 1,950 1,700 992	0.1 (t) \$566 \$300 \$800 3.1 1.0 .1 2.6 \$923 \$83 \$3,170 \$863 \$183	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 2.1 .8 .4 .3 .3 .2 .1	8 7 14 7 6 7 14 15 15 15 30 13 18 15 15 15 15 15	e 2 . 1 (t)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	
2	.3 .2 .5 .5 .1 .6 .3 .5 .1 .26 .8 .7 .7 .0 .5 .8 .7 .7 .0 .5 .8 .7 .7 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	17 16 32 43 52 30 962 612  325 175 68 66 138 2,290 1,040 1,950 1,700 992 1,530	0.1 (t) s66 s30 e50 e80 3.1 1.0 .1 2.6 s923 s3,170 sa600 s183 s27 s1,160	3.1 2.1 1.2 .9 .8 .9 .4 .4 .4 .1 .3 .3 .4 .2 .1	8 7 14 7 6 7 14 15 15 30 13 18 15 15 10 10 22 31 14	e 2 . 1 (t) 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	September	
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2	.3 .2 .5 .5 .1 .14 .26 .8 .7 .7 .7 .7 .7 .7 .7 .7 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9 .9	17 16 32 43 52 30 962 612  325 175 68 66 63 138 2,290 1,040 1,950 1,700 992 479 992 479 1,530 520  343	0.1 (t) \$66 \$30 \$50 \$650 \$3.1 1.0 1.1 2.6 \$923 \$83 \$83,170 \$51,160 \$183 \$27 \$1,160 \$60 \$2,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000 \$12,000	3.1 2.1 1.2 .9 .8 .9 .4 .4 2.1 .3 .3 .3 .4 .2 .1 0	8 7 14 7 6 6 7 14 15 15 30 13 18 15 15 15 10 10 22 31 14 15 24	e 2 . 1 (t) (t) (t) (t) (t) (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000	September	
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2	.3 .2 .5 .5 .5 .1 .1 .8 .7 .7 .0 .8 .7 .7 .0 .8 .9 .21 .1 .8 .21 .1 .8 .21 .1 .26 .21 .21 .26 .21 .26 .21 .26 .21 .26 .21 .27 .27 .27 .27 .27 .27 .27 .27 .27 .27	17 16 32 43 52 43 52 612  325 175 68 66 138 2,290 1,040 1,950 992 479 91,530 520 343 3,060 113 9,060 113	0.1 (t) \$66 \$30 \$65 \$30 \$650 \$31 \$1.0 \$1.1 \$2.6 \$923 \$83 \$3,170 \$5183 \$27 \$1,160 \$64 \$62,800 \$650 \$2,000 \$510 \$31,100 \$52,000 \$510 \$31,100 \$52,000 \$510 \$31,100 \$52,000 \$510 \$31,100 \$52,100 \$510 \$51,100 \$510 \$51,100 \$510 \$51,100 \$510 \$51,100 \$510 \$51,100 \$510 \$510 \$510 \$510 \$510 \$510 \$510 \$	3.1 2.1 1.2 .9 .8 .9 .4 .4 .4 .2.1 .8 .4 .3 .3 .2 .1 .0	8 7 14 7 6 7 14 15 15 30 13 18 15 15 15 10 10 22 31 14 15 24	e 2 . 1 (t) (t) (t) (t) (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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2	.3 .2 .5 .5 .5 .1 .26 .8 .7 .7 .7 .0 .8 .7 .7 .7 .0 .21 .8 .8 .7 .7 .7 .0 .21 .8 .8 .41 .25 .26 .21 .21 .26 .21 .26 .21 .26 .21 .26 .27 .27 .27 .27 .27 .27 .27 .27 .27 .27	17 16 32 43 52 43 52 612  325 175 68 66 138 2,290 1,040 1,950 992 479 91,530 520 343 3,060 113 9,060 113	0.1 (t) \$66 \$30 \$50 \$650 \$3.1 1.0 .1 2.6 \$923 \$83 \$83, 83, 83, 840 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 160 \$52, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200 \$51, 200	3.1 2.1 1.2 .9 .8 .9 .4 .4 .2 .1 .3 .3 .4 .2 .1 0 .1	8 7 14 7 6 7 14 15 15 30 13 18 15 15 15 24	e 2 . 1 (t) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	3	17 16 32 43 52 43 52 30 962 612 325 175 68 66 68 138 2,290 1,940 1,950 1,700 992 479 1,530 520 343 1,060 143 950 115 46 19	0.1 (t) \$66 \$30 \$50 \$650 \$3.1 1.0 1.1 2.6 \$923 \$83, \$170 \$512, \$600 \$512 \$2.1 .5 12,407.7	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 2.1 .3 .3 .4 .2 .1 0 .0 0 0 0 0 0 0 0	8 7 14 7 6 7 14 15 15 30 13 18 15 15 15 10 10 22 31 14 15 24	e 2 . 1 (t) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	3 . 2 . 2 . 5 . 5 . 21 . 16 . 14 . 26 . 8 . 7. 7. 0 . 5 . 21 . 15 . 8 . 7. 7. 0 . 5 . 21 . 15 . 8 . 41 . 17 . 90 . 88 . 41 . 17 . 90 . 24 . 257 . 40 . 195 . 27 . 133 . 3 . 17 . 9 . 1 . 1,293 . 4	17 16 32 43 52 23 962 612 325 175 68 66 138 2,290 1,950 1,700 992 479 1,530 520 479 1,530 1,060 143 950 143 950 115 46 143 950 115 46 19 year (cfs	0.1 (t) \$66 \$30 \$65 \$30 \$65 \$30 \$65 \$30 \$65 \$66 \$30 \$65 \$65 \$66 \$65 \$65 \$65 \$65 \$65 \$65 \$65	3.1 2.1 1.2 .9 .8 .9 .4 .4 .4 .6.4 2.1 .8 .4 .3 .3 .4 .2 .1 .0 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	8 7 14 7 6 6 7 14 15 15 30 18 15 15 15 15 15 15 15 15 15 15 10 10 22 31 14 15 24	.1 .1 .1 (t) e2 .1 (t) 0 0 0 0 0 0 0 0 2.7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	200	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	3 . 2	17 16 32 43 52 23 962 612 325 175 68 66 138 2,290 1,950 1,700 992 479 1,530 520 479 1,530 1,060 143 950 143 950 115 46 143 950 115 46 19 year (cfs	0.1 (t) \$66 \$30 \$65 \$30 \$65 \$30 \$65 \$30 \$65 \$66 \$30 \$65 \$65 \$66 \$65 \$65 \$65 \$65 \$65 \$65 \$65	3.1 2.1 1.2 .9 .8 .8 .9 .4 .4 .4 .2 .1 .0 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	8 7 14 7 6 7 14 15 15 30 13 18 15 15 10 10 22 31 14 15 24	(t) (e2 .1 (t) (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	200	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

e Estimated.
s Computed by subdividing day.
t Less than 0.05 ton.

a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

### SALT RIVER BASIN -- Continued

## PLUM CREEK AT WATERFORD, KY. -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. décendation; P. pipetie; S. siewe; N. in native water; W. in distilled water; C. chemically dispersed; M. mechanically dispersed)

		Methods of analysis		BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSNJM	BSWCM	BSWCM	BSWCM
																									_		
			0. 500																	-	900			_			
		llimeters	0,250	;	1 1	;	;	;	!	100	;	;	100	100	1	1	1	100	:	8	66	:	;	!	;	;	:
		ze, in mi	0.125	100	8 8	100	66	100	;	66	901	9	66	66	;	;	;	66	100	66	66	100	;	;	;	;	;
rsed)		Percent finer than indicated size, in millimeters	0.062	66	66	66	86	86	100	66	66	66	66	86	100	100	100	86	66	86	66	66	100	100	100	100	100
ally dispe	ediment	ner than in	0.031	;	66	66	86	93	66	66	66	96	93	94	96	66	86	92	83	92	06	96	95	16	92	90	86
mechanic	Suspended sediment	Percent fü	0.016	:	86	6	86	87	92	86	86	88	77	75	8	92	85	81	77	8	11	82	18	74	42	80	68
rsed; M,	š		0.008	93	8 to	6	96	76	87	94	94	74	09	57	65	98	82	49	09	62	28	10	99	57	61	65	16
ally dispe			0.004	83	61	200	68	64	75	91	81	83	49	7	23	44	12	53	41	51	49	9	54	43	51	48	62
C, chemic			0.002	65	£ 8	8	7.5	54	67	:	9	25	37	25	42	10	62	44	31	41	38	24	45	34	43	7	49
in distilled water; C, chemically dispersed; M, mechanically dispersed)		Concentration of suspension	analyzed (ppm)	1,530	1,570	1.310	869	1,140	1,590	388	1,280	1,150	1,350	1,390	914	707	918	1,260	1,340	1,170	2,250	1,170	2,030	2,480	1,890	4, 600	4,000
, W,		Concentration	of sample (ppm)	1,520	1,520	649	359	687	939	184	322	626	2,040	2,040	878	345	444	1,610	1,610	1,400	1,320	1,480	2,620	2,620	2,340	6,100	2,350
1	Water	tem- per-	ature (°F)																		_			_		_	
		Discharge		10	0 5	16	88	174	296	134	151	. 004	1,310	1,310	390	129	189	804	804	1,030	320	1,090	955	955	156	1,400	171
		Time		5:00 a.m.	5:00 a. m.	6:00 a.m.	4:30 a.m.	7:00 a. m.	6:00 p. m.	6:00 a.m.	4:30 a.m.	1:00 p. m.	6:00 p. m.	6:00 p. m.	6:00 p. m.	1:30 p.m.	4:00 p.m.	4:00 a.m.	4:00 a. m.	9:00 a. m.	12:05 p. m.	3:00 p.m.	7:30 a. m.	7:30 a. m.	10:00 a.m.	6:00 a. m.	6:30 p. m.
		Date of collection	I	Oct. 6, 1954	Oct. 6	13		Dec. 28	28	Jan. 5, 1955		Feb. 5	Feb. 5	ß		Feb. 16	Feb. 16	Feb. 21	21	21			Feb. 28		28	Mar. 1	Mar. 4

BSWCM BSWCM BSWCM BSWCM BSWCM	BSWCM BSWCM BWCM BSWCM BSWCM	BSWCM BSWCM BSWCM BWCM BWCM	BSWCM BSWCM BSWCM BSWCM BSWCM
	•		
11111	11111	11111	11111
11188	18111	:::::	180 : 1 :
0001	88 : 88	888 18	100 99 100 100
98888	97 98 98 98	98 98 1-1 97	95 99 99 99
889 70 70	88 98 91 91	8 : 89 94	81 71 94 70
80 68 74 65	72 72 79	91 96 100 85	59 54 78 76
67 64 53 20 20 20	65 77 58 58	88 89 89 64	46 40 64 37 60
52 443 50 11	56 69 70 47 55	68 77 77 88 38	39 34 55 28 51
1,650 1,970 1,260 1,940 2,010	1,250 1,920 1,460 2,180 1,050	1,470 659 1,860 1,020 2,590	3, 160 2,780 1,260 4,060 1,200
1,920 2,740 1,480 2,390 2,390	1, 220 1, 320 775 2, 840 786	767 751 1,010 1,440 7,310	9, 130 4, 840 1, 920 5, 500 1, 840
177 407 344 349 349	498 48 126 2,680 223	129 72  25 542	1,150 349 340 1,920 282
8:00 p. m. 4:00 p. m. 6:30 p. m. 8:00 a. m. 8:00 a. m.	10:00 a. m. 7:30 a. m. 5:00 p. m. 4:00 a. m. 11:00 a. m.	5:00 p. m. 9:00 a. m. 3:00 p. m. 4:00 p. m.	8:00 p.m. 7:00 p.m. 5:00 p.m. 9:15 a.m. 11:00 a.m.
Mar. 4, 1955 Mar. 5. Mar. 15. Mar. 15.	Mar. 15. Apr. 6. Apr. 23 Apr. 24	May 13         5:00 p. m.           May 25         9:00 a. m.           June 7         4:00 p. m.           July 7         5:00 p. m.	July 18     8:00 p. m.       July 22     7:00 p. m.       July 24     5:00 p. m.       July 26     9:15 a. m.       July 26     11:00 a. m.

### SALT RIVER BASIN--Continued

## SALT RIVER AT SHEPHERDSVILLE, KY.

gaging station at bridge on State Highway 61 at Shepherdsville, Bullitt County, 500 feet downstream from Louisville and Nashville Railroad

bridge, and 2.5 miles downstream from Floyds Fork.
DALINAGE ARRA--1,200 square miles, approximately.
RECORDS AVAILABLE.—-chemical analyses: October 1949 to September 1950, October 1952 to September 1955.
Water temperatures: October 1952 to September 1955.

EXTREMES, 1954-55.--Dissolved solids: Maximum, 287 ppm Dec. 21-27; minimum, 135 ppm Mar. 16-17. Hardness: Maximum, 253 ppm Dec. 21-27; minimum, 100 ppm Mar. 16-17. Sediment records: October 1952 to September 1955.

Specific conductance: Maximum daily, 508 micromhos Dec. 27; minimum daily, 175 micromhos Feb. 7.

Mater temperatures: Maximum, 88°F Aug. 26; minimum, 35°F on several days in January and February.

Sediment concentrations: Maximum, 88°F Aug. 26; minimum, 35°F on several days in January and February.

Sediment concentrations: Maximum, 28°F Aug. 26°F. 21°F. 1854; minimum daily, 84,400 tons Mar. 16; minimum daily, 1854.

Becline conductance: Maximum, 28°F pum Dec. 21°F. 1854; minimum, 95°F pum Sept. 20°21, 1854.

Sediment concentrations: Maximum daily, 28°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F animum daily, 10°F anim

ND.	AND	TENNES	SSEI	3 1	RI	VE	R	BA	SIN	S								
		Color	19	20	20	2	17	15	20	22	30	11	2	12	35	6	-	9
		Hd	5.	7.4	7.4	7.8	2.6	7.6	7.4	7.6	7.5	7.7	7.6	8.0	7.6	6.	8	8.0
	Specific conduct-	ance (micro- mhos at	25 C) 275	237	230	276	329	409	450	444	401	341	415	484	279	385	452	454
	ress CO,	Non- carbon-	21	16	19	22	22	8	32	34	32	38	45	26	32	42	48	45
	Hardness as CaCO,	Calcium, mag-	135	115	113	137	166	203	225	225	199	169	213	253	142	194	232	234
	Dissolved solids	on evap- oration	at 180°C)	145	145	172	200	245	265	254	242	204	248	287	167	225	264	266
ber 1955	,	(NO ₃ )	5.5	4.7	4.1	4.8	4.4	3.0	2.0	<b>F</b> ;	9.	4.2	8.1	₩.	8.8	15	14	12
to Septem	i	Fluoride (F)	0.2	e.	4.	4.	۳.	ლ.		63	۲.	٦.	~?	۲.	~	-:	67	2
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Chloride (C1)	8.8	3.1	3.4	4.6	4.0	12	=	63	5.5	4.5	5.6	5.9	3.5	4.8	6.2	5.8
er year Oc		(SO,)	18	1.	15	61	21	88	30	34	37	32	38	42	21	28	34	38
nillion, wat	Bicar-	bonate (HCO ₈ )	137	120	115	137	170	210	234	232	204	160	202	240	132	186	227	229
parts per n	Potas-	sium (K)	8.4	8.8	3.8	3.8	3.8	3.6	3.8	4.1	3.7	3.0	2.7	2.5	2.1	1.6	1.3	1.2
lyses, in p	;	(Na)	2.5	1.8	2.1	2.0	2.8	6.0	5.7	4.5	5.6	3.5	4.0	8.8	87	8.3	4.1	3.6
emical ana	Mag-	nesium (Mg)	5.2	4.6	5.1	6.6	7.3	=	9.5	9.0	9.1	8.7	10	11	7.5	9.6	12	11
Ch	Cal-	cium (Ca)	45	37	37	4	54	83	74	22	æ	S	8	8	4	62	74	22
		(Fe)	0.02	5	8	\$	\$	.02	8.	.03	9.	80.	8	87.	8	6	8	5
		(S1O ₂ )		6.9			_			3.4	5.2	8.8	6.5	7.3	5.5	7.4	8.1	8.2
	Mean	discharge (cfs)						31.9	22.0							2,033	1,044	807
-		Date of collection	Oct. 1-7, 1954	Oct. 8-13	Oct. 14-17	Oct. 18-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 1-6	Dec. 7-9	Dec. 11-20	Dec. 21-27	Dec. 29-31	Jan. 1-9, 1955	Jan. 10-20	Jan. 21-31

### SALT RIVER BASIN

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246 189 105 203 1113 104	152 117 180 195 100 162 129 207	202 181 218 142 208 235 128 128	220 136 182 190 117 117 141	180
.277 220 146 228 149 214	186 152 222 258 258 135 150 207	244 215 258 167 239 262 148	252 168 211 218 146 186 166	212
15 9.3 11 15 9.7 9.5	12 19.0 13 12 5.9 10 8.2 5.5	4 4 4 4 4 4 8 8 8 9 9 9 9 9 9 9 9 9 9 9	40004660	6.0
	www.		ပြဲလံလ်လံပ်သံပ်လံ	0.2
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233 176 98 188 105 172 172	148 114 176 195 110 1132 132	208 188 226 144 214 214 238 129	224 136 136 198 122 170 151	182
2404779	7.11.22.11.22.23.24.1.25.02.24.1.4.25.02.24.1.4.25.02.24.1.4.1.4.25.02.24.1.4.1.4.1.25.1.4.1.4.1.25.1.25.1.4.1.4.1.25.1.25	22.0	7.1.1 2.2.2 2.0.4.4 3.5.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	2.6
442666	23.51 1.59 1.99 2.00 3.33 3.33	4.40.60.40.4	0.2222323 0.0661.663	3.6
12 7.6 9.9 9.9 1.9 6.8 6.8	7.6 8.6 8.6 9.7 5.0 16 16	13 9.5 13 8.2 11 14 6.6 9.6	13 8.0 9.8 11 6.5 8.1 7.4	9.1
79 35 65 65 34 34	98 88 88 89 48 89 48 89 89 89 89 89 89 89 89 89 89 89 89 89	60 66 66 65 71 71 60	67 57 58 54 54 54	57
	29.20.20.20.20.20.20.20.20.20.20.20.20.20.	9325000000000000000000000000000000000000	.02 .02 .03 .04	0.03
8 8 9 9 4 F 8	8 6 9 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.4.00 C.000 0.000 S.000	8.6.7.8.6.7.6.8.6.2.0.2.4.2.	7.0
1, 023 1, 005 15, 260 2, 421 15, 300 3, 600 16, 680	6,453 7,480 1,618 3,515 11,180 3,010 a 10,988 a 976	1, 125 729 514 5, 373 110 a 5, 005 a 5, 005	809 1,052 a898 208 a1,390 275 18.9	1,623
Feb. 1-3, 1955 Feb. 4-5 Feb. 6-2 Feb. 10-21 Feb. 25-24 Feb. 27-Mar. 2	Mar. 3-5 Mar. 6-18 Mar. 14-15 Mar. 16-17 Mar. 18-20 Mar. 26-Apr. 10	Apr. 11-13 Apr. 14-19 Apr. 24-23 Apr. 24-26 Apr. 27-30 May 1-12 May 16-20	May 21-25.  May 26-28.  Nay 29-June 24.  June 25-July 6.  July 7-29.  July 30-Aug. 18.  Aug. 19-Sept. 3.  Sept. 4-30.	Time-weighted average b

a Revised discharge. b Represents 99 percent of days and 99 percent of runoff.

SALT RIVER BASIN -- Continued

SALT RIVER AT SHEPHERDSVILLE, KY.--Continued
Temperature (*F) of water, water year October 1954 to September 1955

	September	min	£ 5	: 69	5	02	69	89	8	5 E	20	2	61	2 2	2	69	8	8 8	8	12	72	7.5	4.5	•	F 1	2 :	= 8	2 2	3 !	0.
	Sept	weu	82	828	8	82	81	82	8	8 2	75	75	48	8 3	ī	85	85	8	78	8	83	19	9 2	2	£ ¦	= 8	2 2	3 2	2 ;	80
	ust	nim	81	82	83	83	82	82	85	2 22	8	8	65	8 5	9.	48	48	78	78	8	8	6.5	0 4	? ;	9.5	9 8	2	= E	7	79
	August	max	83	86	86	86	84	84	28.	3 42	81	8	80	8	2	8	81	84	83	84	83	28	2 6	;	æ :	2.0	8 8	2 2	8 8	84
	ly.	min	75	2 80	79	49	79	78	13	92	11	E	28	6.6	2	80	8 2	92	16	76	78	8 5	3 2	: 1	e 1	20 6	P (	7.0	2 2	78
	July	max	82.8	83	83	81	80	79	78	8 82	78	49	8	<b>2</b> 2	5	8	2 8	3 5	19	42	28	6 5	5 5	•	6.0	2 2	200	2 8	8 8	8
	e e	mim	69	8 8	2	E	72	11	2.5	2 2	25	2	3	63	2	99	8 6	2 2	73	74	75	19	2 5	2	2	7.6	7.	2.5	: ;	69
	June	max	70	72	72	73	72	72	<u> </u>	2 2	25	2	2	4,8	8	8	2 5	3.5	75	16	7.1		2 2		7.7	2 6	2 5	0 6	2 ;	1.1
22	Ŋ	mtn	84	8 8	89	69	70	20	2 5	8 8	89	8	4	62	20	62	4 8	6.5	89	69	2	F 8	7 -	: :	21	2 6	2 6	7.5	: 2	88
mber 15	May	max	88	8	69	70	11	5	21	2 2	69	89	99	25 8	20	25	99	8 8	2	20	5	22	3 5	?	F 1	2 6	2 1	25	25	8
o Septer	=	min	æ 8	25	2	26	28	8	8	28 28	29	9	62	64	40	65	65	8	02	70	0.	67	£ 6	3	8	8 8	3 :	61	70	19
1954 termogra	April	max	8 8	2.5	26	8	9	8	8 :	20 20	8	62	99	8 9	8	65	64	8 2	2	20	5	2 1	5 6	5	62	2 :	3 5	2 2	<b>5</b> :	62
water year October 1954 to Se alcohol-actuated thermograph	to.	mim	25 82	215	21	25	53	22	6	<del>\$</del> <del>\$</del>	48	49	21	25	8	22	9	200	200	20	23	2 2	2 2	3	<b>\$</b>	9 9	£ :	3.4	‡ <del>\$</del>	22
water year October 1954 to September 1955 alcohol-actuated thermograph/	March	max	52	25	25	53	54	24	25	3 %	49	21	2	92	8	26	9 1	200	20	53	2	ž :		3	8	69	<b>2</b> :	44	\$ 4	52
r, watenyl alco	ary	min	35	32.5	32	32	36	36	8	8 8	7	38	36	33	ç	36	33	8 <del>4</del>	4	44	43	42	3.5	ŗ	44	4:	40	1	: :	39
of wate sous etl	February	max	35	32.5	36	36	36	8	8	8 <del>2</del>	42	4	8	98	 8	37	e	\$ 4	4	45	4	£:	# <b>?</b>		4:	9 6	2	1	: ;	40
Temperature (°F) of water, Continuous ethyl	ary	utu	44	: 4	4	46	20	49	40	ŧ ‡	42	40	\$	88	8	8	8	8 8	8	37	37	8 8	2 6	3	8	8	8	9 8	3 25	40
nperatu	January	max	4.5	: 4	49	8	52	22	\$	<del>\$</del> <del>\$</del>	44	42	40	<del>2</del> 6	8	33	8 8	9 8	88	38	88	8	8 5	;	36	5	2	9 8	8 8	41
Ter	per	min	£ 6	5 5	\$	43	41	40	8	8 8	æ	88	38	9 9	\$	40	\$ \$	\$ 4	: 9	39	38	5	5 6	5	3	5	5	\$ 6	* 4	40
	December	max	4.5	£ £	43	43	43	4	9 :	8 8	8	8	\$	<b>\$</b> :	<b>2</b>	9	<del>\$</del> :	‡ <del>4</del>	4	49	39	8 8	3 5	5	37	5	<b>2</b>	\$ 4	\$ 4	41
	nber	mtm	8 8	4	8	8	47	46	9 9	6 4	46	44	4	÷ :	÷	20	200	25	8	8	2	200	2 9	ř	84	9,	£ :	<b>4</b> 2	<b>;</b> ;	48
	November	max	52	51	49	84	49	49	65	<del>2</del> 6	49	20	S	20	2	25	2.	3 5	52	20	2	200	2 2	3	84	2	9:	42	<b>;</b> ;	20
	ber	min	4.	23	73	74	72	69	64	8 8	67	8	89	8	2	62	8 8	200	26	26	22	7	5 2	5	7	8 2	8 :	4.0	2 2	62
	Octo	max	75	7.	42	16	75	72	8	8 8	2	8	8	25	2	65	8 62	3 6	88	26	99	99	8 2	3	9	8 2	8 :	8 2	25 25	49
	Dav		1		4	5	9	Ţ		10	11	12	13.	14		16	17	19	20	21	22	23	24		ZO	200	007	30	31	Атегаде

### SALT RIVER BASIN

### SALT RIVER BASIN -- Continued

### SALT RIVER AT SHEPHERDSVILLE, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955

		October			November			December	
	Mean		d sediment	Mean		ed sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
1	158		20	-			105		10
1 2	188	47 54	20	34 30	44 35	4 3	165 144	35 45	16 17
3	83	46	10	30	40	3	127	37	13
4	53	31	4	32	37	3	118	26	8
5	42	32	4	34	36	3	172	30	b14
6	282 180	36 170	27	35	30	3 3	804	102	221
7 8	72	300	874 58	34 32	32 23	2	622 480	247 317	415 411
9	48	177	23	30	17	bī	410	200	221
10	42	92	10	28	16	1	517	140	b 200
					_			ł	
11 12	36	75	7	27	25	b2	420	97	110
13	190 658	103 231	8 64 410	24 23	37 33	2 2	330 1,270	62 85	55 s 316
14	291	188	148	23	26	2	1,550	196	820
15	1,620		sa 4, 600	21		h ~ 1	1,050	102	289
	-		· .			eı l	1		
16	1,100	870	s 2, 720	18		[[ [	<b>73</b> 0	72	142
17	440 273	430 252	511	16		Ι.	559	56	84
19	172	168	186 78	19 22	14 14	1 1	504 462	38 42	52 52
20	118	132	42	27	16	b1	425	35	40
									l
21	86	112	26	67	19	3	380	27	28
22	67 56 -	76	14	169	28	13	330	17	15
23 24	47	67 73	10	130 121	45 29	16 9	273 255	22 23	16 16
25	41	64	7	144	20	8	235	33	21
					_~				•
26	36	62	6	165	13	6	207	27	15
27	36	55	5	151	19	8	192	. 12	6
28	46 48	47 48	6 6	264 335	29 36	21 32	3,090	1,090 1,560	s 17, 100
30	42	41	5	215	36 41	24	11,000 9,740	740	46,300 19,500
31	38	39	4				4,240	392	4,490
Total.	6,589		9,121	2,300		180	40,801		91,003
								<del>'</del>	
		January		l	February			March	
1 2	1,880 1,450	269 134	1,360 525	360 1,210	7 34	7 s 143	18,000 11,400	1,070 760	52,000 23,400
3	1,220	86	283	1,500	197	798	5,560	255	s 4, 240
4	1,090	68	s 225	1,140	152	468	4,200	226	s 3, 240
5	3,650	691	6,810	2,870	303	s 4,670	9,660	1,700	44, 300
ا	3,740	228	ایمورا		1 500	F1 500	1	1.700	EØ E00
6	2,470	125	2,300 834	17,300 21,500	1,530 1,050	71,500 61,000	11,900 7,890	1,760 776	56,500 s18,100
8	1,550	71	297	15,800	479	s 22, 100	2.650	202	1,440
9	1,250	46	155	6.450	246	4,280	1,770	73	349
10	1,040	37	104	2,700	· 119	868	1,600	<b>6</b> 0	259
11	978	27	71	9 000	an	400	1 000	4.5	154
12	978 970	27	71   58	2,360 1,920	67 65	427 337	1,270 2,250	45 32	154 194
13	994	22	59	1,920	56	192	1,200	23	74
14	898	14	34	1,310	49	173	1,400	22	83
15	978	10	sb 30	1, 200	38	123	5,630	296	s 6, 560
16	1,360	40	147	1,520	56	s 277	13,600	2,300	84,400
17	1,370	40	159	3,500	372	3,520	8,760	2,300 1,600	37,800
18	1,130	42	128	2,560	206	1,420	3,620	335	3, 270
19	954	30	77	1,760	99 ′	470	2,950	170	1,350
20	818	21	46	1,460	68	268	2,460	262	s 1,950
,, i	010	••	ا منہ ا	1 1	0=0	L-0E 000	1	1 050	es 000
21 22	810 1,490	18 71	s 43 286	7,490	950	sa25,000	14,800	1,650	65,900 59 300
23	1,510	59	240	20,900 17,100	1, 290 790	72,800 36,500	19,800 11,800	1,110 475	59,300 15,100
24	1,230	37	123	7,910	265	s 6, 150	5,670	216	3,310
25	1,000	24	65	3,340	131	1,180	2,870	81	628
26 27	818 573	17 15	38 23	3,860	170	s 2, 230	2,240	48 48	290 275
28	573 450	15 9	11	17,500 19,800	1,300 1,440	sa64,000 77,000	2,120 2,090	48 68	275 384
29	370	6	6	19,000	1, 110	11,000	1,770	78	373
30	330	7	6				1,140 874	103	317
31	300	8	6					57	134
Total .	38,671		14,549	187, 590		457, 901	182,944		485,674
					- ~				-atlan amanh

e Estimated. s Computed by subdividing day.

a Computed from partly estimated concent ation graph.
b Computed from estimated concentration graph.

### SALT RIVER BASIN--Continued

### SALT RIVER AT SHEPHERDSVILLE, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

							1900CORE		
		April			May		1	Ju ne	
		Suspende	d sediment		Suspende	d sediment		Suspende	l sediment
_	Mean	Mean		Mean	Mean		Mean	Mean	
Day	dis-		Tons	dis-		Tons	dis-		Tons
	charge	concen-	per	charge	concen-	per	charge	conten-	per
	(cfs)	tration	day	(cfs)	tration	day	(cfs)	tra*ion	day
		(ppm)	,	(,	(ppm)	uny	,,	(ppm)	ua y
1	746	39	78	545	47	69	425	121	139
2	650	38	67	440	42	50	282	110	84
3	587						202		45
3		40	63	365	42	41	207	81	
4	510	36	50	315	40	34	158	67	28
5	445	35	42	268	32	23	124	48	16
			i !						
6	608	50	82	231	27	17	100	38	10
7	658	48	85	196	24	13	196	251	s 202
8	468	47	59	165	34	15	3, 630	2, 180	21,400
0									
9	375	53	54	140	40	15	1,580	433	s 1,980
10	330	42	37	134	38	14	1,270	138	473
11	474	47	60	192	37	19	1,920		e 1,700
12	922	72	179	188	46	23	2,490	368	2,470
13	1,980	200	sa 1, 100	1,050		e 3, 400	1,800	225	1,090
14	1,470	295	1,170	6,950	2,860	53,700	1,390	123	462
15	914	181	447	3,060	751	s7,870		87	270
	J17	101	77'	3,000	101	51,010	1,150	0,	210
16	658				•00	ا	1	ا مما	248
17		73	130	1,210	188	614	1, 150	80	
17	517	58	81	794	98	210	770	77	160
18	440	50	59	531	74	106	504	61	83
19	375	43	44	395	65	69	365	52	51
20	325	36	32	305	55	45	300	55	44
1									
21	320	40	34	251	48	32	435	65	76
22	370	47	47	300	41	33	330	73	65
23	1,040	600	sa 3, 100	310	42	35	192	46	24
24	7,770	2,620	55,000	305	48	40	560	180	sa <b>24</b> 0
25	6, 110	1,530	s 27, 400	2,880		e7,600	410	227	251
			1 1						
26	2,240	430	2,600	1,960	871	s5,210	400	117	126
27	1,560	145	611	746	238	479	340	98	90
28	1,190	76	244	450	128	156	227	65	40
29	938	53	134	1,240	200	sa 700	151	39	16
30	706	42	80	818	243	537		25	ě
30	100	7.				336	118		
31			1	858	145	330			
Total .	35,696		93, 169	27,592		81,505	22, 974		31,891
Total.	35, 696		93, 169	27,592		81,505	22,974		31,891
		July			August			 September	31,891
1	86	July 33	8	305	August 125	103	13	September	31,891
1	86 67	July 33 22	8 4	305 211	August 125 95	103 54	13 9.6	September	31,891
1 2 3	86 67 54	July 33 22 23	8 4 3	305 211 140	August 125 95 58	103 54 22	13 9.6 7.2	September	31,891
1	86 67 54 80	July 33 22	8 4 3 6	305 211 140 111	August 125 95	103 54 22 13	13 9.6 7.2 6.4	September	31,891
1 2 3	86 67 54	July 33 22 23	8 4 3	305 211 140	August 125 95 58	103 54 22	13 9.6 7.2	September	31,891
1 2 3 4 5	86 67 54 80 336	July 33 22 23 30	8 4 3 6 e 100	305 211 140 111 232	August 125 95 58 43	103 54 22 13 e90	13 9.6 7.2 6.4 4.9	September	31,891
1 2 3 4 5	86 67 54 80 336	July 33 22 23 30 83	8 4 3 6 e 100	305 211 140 111 232	August 125 95 58 43 	103 54 22 13 e90	13 9.6 7.2 6.4	September	
1 2 3 4 5	86 67 54 80 336	July 33 22 23 30	8 4 3 6 e 100	305 211 140 111 232	August 125 95 58 43	103 54 22 13 e90	13 9.6 7.2 6.4 4.9	September	31,891 (et)
1	86 67 54 80 336 231	July 33 22 23 30 83 122	8 4 3 6 e 100 52 54	305 211 140 111 232 310	August 125 95 58 43 130 102	103 54 22 13 e90 sa120 40	13 9.6 7.2 6.4 4.9 3.6 3.0	September	
1 2 3 4 5 6 7 8	86 67 54 80 336 231 165 235	July 33 22 23 30 83 122 207	8 4 3 6 e 100 52 54 131	305 211 140 111 232 310 144 118	August 125 95 58 43 130 102 106	103 54 22 13 e90 sa 120 40 34	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5	September 8 8	
1	36 67 54 80 336 231 165 235 945	July 33 22 23 30 83 122 207	8 4 3 6 e 100 52 54 131 e 1,700	305 211 140 111 232 310 144 118	August 125 95 58 43 130 102 106 79	103 54 22 13 e90 sa 120 40 34	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0	September	
1 2 3 4 5 6 7 8	86 67 54 80 336 231 165 235	July 33 22 23 30 83 122 207	8 4 3 6 e 100 52 54 131	305 211 140 111 232 310 144 118	August 125 95 58 43 130 102 106	103 54 22 13 e90 sa 120 40 34	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5	September 8 8	
1	86 67 54 80 336 231 165 235 945	July 33 22 23 30 83 122 207	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800	305 211 140 111 232 310 144 118 91	August 125 95 58 43 130 102 106 79	103 54 22 13 e90 sa 120 40 34 19 e30	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0	September	
1 2 3 4 5 6 7 8 9 10	36 67 54 80 336 231 165 235 945 1,810	July 33 22 23 30 83 122 207 766	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050	305 211 140 111 232 310 144 118 91 124	August 125 95 58 43 130 102 106 79 114	103 54 22 13 e90 sa 120 40 34 19 e 30	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2	September	
1	86 67 54 80 336 231 165 235 945 1,810	July 33 22 23 30 83 122 207 766 362	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 457	305 211 140 111 232 310 144 118 91 124	August 125 95 58 43 130 102 106 79 114 102	103 54 22 13 e90 sa 120 40 34 19 e 30	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,380 468 278	July 33 22 23 30 83 122 207 766 362 220	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 457 165	305 211 140 111 232 310 144 118 91 124 420 486 400	August 125 95 58 43 130 102 106 79 114 102 98	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2	September	
1	36 67 54 80 336 231 165 235 945 1,810 1,380 468 278	July 33 22 23 30 83 122 207 766 362 220 121	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 457 165 59	305 211 140 111 232 310 144 118 91 124 420 486 400 231	August 125 95 58 43 130 102 106 79 114 102 98 90	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.0 4.2 9.6	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,380 468 278	July 33 22 23 30 83 122 207 766 362 220	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 457 165	305 211 140 111 232 310 144 118 91 124 420 486 400	August 125 95 58 43 130 102 106 79 114 102 98	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2	September	} (et)
1	36 67 54 80 336 231 165 235 945 1,810 1,380 468 278 180 158	July 33 22 23 30 83 122 207 766 362 220 121 90	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 457 165 59 38	305 211 140 111 232 310 144 118 91 124 420 486 400 231	August 125 95 58 43 130 102 106 79 114 102 98 90 75	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.0 4.2 9.6 8.0	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,380 468 278 180	July 33 22 23 30 83 122 207 766 362 220 121	8 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 457 165 59 38 28	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130	August 125 95 58 43 130 102 106 79 114 102 98 90 75	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 56 56 58	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 9.6 8.0	September 8 18 43	} (et)
1	86 677 54 80 336 231 165 235 945 1,810 1,380 488 278 180 158	July 33 22 23 30 83 122 207 766 362 220 121 90 85	\$ 4 4 3 6 6 e 1000 52 54 131 e 1,700 e 3,800 s 3,050 457 1657 59 38 28 e 2,600	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130	August 125 95 58 43 130 102 106 79 114 102 98 90 75 60 80	103 54 22 13 e90 sa 120 40 34 19 e30 129 134 106 56 26 s 18	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,360 468 278 180 153	July 33 22 33 30 83 122 207 766 362 220 121 90 85 800	8 4 4 3 6 e 100 52 54 131 e 1,700 e 3,800 457 165 59 38 28 e 2,600 sa 5,800 sa 5,800	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130	August 125 95 84 43 130 102 106 79 114 102 98 90 75 60 80 81	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 28 s 18 sa 50	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 4.2 9.6 8.0 6.4 4.2	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,380 488 278 180 1,010 2,300 4,500	July 33 22 23 30 83 122 207 766 362 220 121 90 85 80 00 1,520	8 4 4 3 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 457 165 5 59 38 e 2,800 sa 5,800 l 18,500	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130	August 125 95 843 130 102 106 79 114 102 98 90 75 60 80 61 56	103 54 22 13 e90 sa 120 40 34 19 e30 129 134 106 56 26 s 18	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0 6.4 4.2 9.6	September	(t) 1
1	86 67 54 80 336 231 165 235 945 1,810 1,360 468 278 180 153	July 33 22 33 30 83 122 207 766 362 220 121 90 85 800	8 4 4 3 6 e 100 52 54 131 e 1,700 e 3,800 457 165 59 38 28 e 2,600 sa 5,800 sa 5,800	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130	August 125 95 84 43 130 102 106 79 114 102 98 90 75 60 80 81	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 28 s 18 sa 50	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 4.2 9.6 8.0 6.4 4.2	September	} (et)
1	86 67 54 80 336 231 165 235 945 1,810 1,380 468 278 180 153 124 1,010 2,300 4,130	July 33 22 33 30 83 122 207 766 362 220 121 90 85 800 1,520 1,350	8 4 4 3 6 6 e 100 52 52 54 131 e 1,700 e 3,800 8 3,050 457 59 38 e 2,600 8 2,500 15,000 15,000	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36	August 125 95 843 130 102 106 79 114 102 98 90 75 60 80 61 56 38	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26 s 18 sa 50 11 7	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0 6.4 4.2 9.6	September	(t) 1
12345667	86 677 54 80 336 231 165 235 945 1,810 1,380 468 278 180 158 124 1,010 2,300 4,500 4,130	July 33 22 23 30 83 122 207 766 362 220 121 90 85 800 1,520	\$ 4 4 3 6 e 1000 52 54 131 e 1,700 457 165 59 38 28 e 2,600 sa 5,800 l 8,500 l 15,000 s 3,940 s 3,940	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36	August 125 95 58 43 130 102 106 79 114 102 98 90 75 60 80 61 56 36	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 28 s 18 sa 50 11 7	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0 6.4 4.2 1.1 1.2 1.0 1.2 1.0 1.2 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	September	(t) 1
1	86 67 54 80 336 231 165 235 945 1,810 1,380 468 278 180 153 124 1,010 2,300 4,130 2,300 4,130	July 33 22 33 30 83 122 207 766 362 220 121 90 85 800 1,520 1,350	8 4 4 3 6 6 e 100 52 52 54 131 e 1,700 e 3,800 8 3,050 457 59 38 e 2,600 8 2,500 15,000 15,000	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36	August 125 95 843 130 102 106 79 114 102 98 90 75 60 80 61 56 38	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26 s 18 sa 50 11 7	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0 6.4 4.2 1.1 1.2 1.0 1.2 1.0 1.2 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	September	(t) 1
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1	86 67 54 80 336 231 165 235 1,810 1,380 468 278 101 2,300 4,500 4,130 2,390 1,190 1,100 1,240 1,190 1,190 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,	July 33 22 23 30 30 122 207 766 362 220 121 90 85 800 1,520 1,520 1,350 562 255 198 308 1,400 345 540 345 540 441 207	8 4 4 3 6 e 100 52 54 131 e 1,700 e 3,800 8 3,050 185 59 8 18,500 15,000 s 3,940 18,500 15,000 15,000 15,000 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,70	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36 29 24 21 16 14	August 125 95 843 130 102 106 79 114 102 98 90 75 60 80 61 56 38 32 20	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26 s 18 sa 50 11 7 7 3	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 4.2 9.6 8.0 6.4 4.2 3.0 1.5 1.0 1.5 1.0 1.5 1.0 1.5 1.0 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	September	(et) (t) 1 (et) e1
1	86 67 54 80 336 231 165 235 248 180 1,380 488 278 180 1,010 2,300 4,130 2,300 1,190 2,300 1,190 1,190 1,190 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240	July  33 22 23 30 83 122 207 766 362 220 121 90 85 8,520 1,520 1,520 1,520 1,520 1,520 1,520 1,520 441	8 4 4 3 6 6 e 100 52 54 131 e 1,700 e 3,800 s 3,050 4 55 59 38 e 2,600 s a 5,800 15,000 s 3,940 15,500 s 3,940 15,500 s 3,1,700 2,800 s a 1,770 2,800 s a 1,770 s 6894 159	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36 29 24 21 16 14	August 125 95 95 43 130 102 106 79 114 102 98 90 75 60 80 61 66 36 33 32	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26 s 18 sa 50 11 7 7 3 2 2 1	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.0 9.6 8.0 6.4 4.2 3.0 1.5 1.0 8.3 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	September	(et) (t) 1 (et) e1 e170 s10,800
1	86 67 54 80 336 231 165 235 1,810 1,380 468 278 101 2,300 4,500 4,130 2,390 1,190 1,100 1,240 1,190 1,190 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,240 1,	July 33 22 23 30 30 122 207 766 362 220 121 90 85 800 1,520 1,520 1,350 562 255 198 308 1,400 345 540 345 540 441 207	8 4 4 3 6 e 100 52 54 131 e 1,700 e 3,800 8 3,050 185 59 8 18,500 15,000 s 3,940 18,500 15,000 15,000 15,000 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,700 15,70	305 211 140 111 232 310 144 118 91 124 420 486 400 231 130 104 214 69 47 36 29 24 21 16 14	August 125 95 95 43 130 102 106 79 114 102 98 90 75 60 80 61 66 36 33 32	103 54 22 13 e90 sa 120 40 34 19 e 30 129 134 106 56 26 s 18 sa 50 11 7 7 3	13 9.6 7.2 6.4 4.9 3.6 3.0 2.5 2.0 1.2 1.2 1.2 1.0 4.2 9.6 8.0 6.4 4.2 3.0 1.5 1.0 3.0 1.5 1.0 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	September	(et) (t) 1 (et) e170

 Total discharge for year (cfs-days)
 586, 969.3

 Total load for year (tons)
 1,354,536

 e Estimated.
 t Less than 0.5 ton.

s Computed by subdividing day.

a Computed from partly estimated corcentration graph.

SALT RIVER BASIN -- Continued

SALT RIVER AT SHEPHERDSVILLE, KY. --Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawat tube: D, decanation: P., pipette; S, siewe; N, ın native water; C. Phemically dispersed; M, mechanically dispersed

	;	Methods of analysis	Ì	BWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM
			1.000																			
			0.500					100							_							
			0.350																			
		illimeters	0.250	19	201	;	100	;	66	;	1	;	!	!	1	!	!	;	;	:	;	:
		ize, in m	0,125	; 8	86	:	66	100	88	100	:	1	100	:	;	1	1	100	1	:	1	1
rsed)		Percent finer than indicated size, in millimeters	0.062	18	8 6	100	8	66	66	66	100	100	66	100	100	100	91	66	100	100	100	100
any dispe	sediment	ner than i	0.031	100	9 6	86	97	96	9.1	95	94	66	86	66	66	66	94	92	66	66	94	86
mechanic	Suspended sediment	Percent fi	0.016	86	3 6	91	91	85	88	8	83	88	87	94	96	91	74	18	92	86	82	86
rsed; M,	Š		0.008	4.0	2 82	28	90	49	2.2	99	69	1.1	89	80	98	92	24	92	87	98	89	67
ally dispe			0.004	882	6 2	63	20	22	64	53	57	65	20	70	74	99	46	53	7.4	92	22	56
c, chemic			0.002	69	61	9	61	43	55	45	48	54	48	51	9	52	37	14	62	26	42	45
in distilled water; C, chemically dispersed; M, mechanically dispersed		Concentration of suspension	analyzed (ppm)	1,610	1, 860	1, 260	826	1,450	1,030	1,630	1,950	1,490	1,390	931	2,470	1,200	4,880	2, 330	1,110	1,320	2,560	1,460
w, in		Concentration	of sample (ppm)	976	1, 320	1,770	792	1,660	1, 140	1,270	1,340	1,710	1,710	1, 160	854	1,720	3, 110	3.290	1,230	867	1,680	1,780
	Water	tem- per-	ature (°F)																			
		Discharge (cfs)		1,370	10,200	11,500	10, 600	16,800	22,300	21,000	21,700	20, 100	20,100	18,300	13,900	10,800	4,910	5.200	2,560	1,750	5,800	4,300
		Time		8:00 a.m.	7:00 p.m.	2:05 p.m.	8:30 a.m.	9:00 a.m.	10:00 a.m.	7:00 a.m.	3:00 p.m.	7:00 a.m.	7:00 a.m.	7:00 a.m.	5:00 a.m.	3:00 p.m.	7:00 a.m.	7:00 a.m.	7:00 a.m.	6:00 a.m.	6:00 a.m.	6:00 a.m.
	į	Date of collection		Oct. 16, 1954	Dec. 29	Dec. 29	Dec. 30	Feb. 6, 1955	Feb. 7	Feb. 22	Feb. 22	Feb. 28	Feb. 28	Mar. 1	Mar. 2	Mar. 5	Apr. 24	May 14	May 26	July 11	July 20	July 25

### SALT RIVER BASIN--Continued

### ROLLING FORK NEAR BOSTON, KY.

LOCATION.--At gaging station on U. S. Highway 62 and State Highway 61, 0.4 mile downstream from Beech Fork, and 2.3 miles southwest of Boston, Nelson County.

DRAINAGE AREA.--1,290 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1952.

Water temperatures: October 1949 to September 1955.

EXYREMES, 1954-55.--Water temperatures: Maximum, 86°F Aug. 4, 6; minimum, freezing point on many days during December to February.

EXTREMES, 1949-55.--Water temperatures: Maximum, 87°F July 4, 1950, June 22, 25, 28, 1954; minimum, freezing point on many days during winter months.

REMARKS.-Daily water temperatures reported are averages of twice-daily measurements. The data reported under extremes are the individual maximum and minimum measurement. Records of discharge for water year October 1954 to September 1955 given in WSP 13°5.

			7.1.100	- Lully III	abul Cirici	na at app	OATHIACC.	y o a. m.	a 1.50	9. III <u>.</u> /		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	51	43	45	34	44	47	62	70	77	82	74
2	70	46	42	42	32	52	48	63	72	78	82	72
3	70	46	42	44	31	52	52	64	72	78	83	72
3 4	74	46	40	45	32	54	53	66	72	73	84	68
5	74	44	40	47	36	52	56	68	73	78	84	68
	70	44	38	49	38	52	58	70	71	80	84	١
6	64	45	38		34							71 72
7	62	44	30	47	34	44	58	70	70	79	84	
8			36	46	36	44	56	69	72	78	81	73
9	62	44	38	48	38	45	56	68	73	78	82	74
10	65	44	36	45	42	50	54	67	72	80	82	76
11	68	44	34	40	32	50	54	67	70	81	79	68
12	68	44	35	40	31	52	58	68	72	80	77	65
13	69	44	36	<b>3</b> 8	31	48	63	63	66	81	76	66
14	68	44	35	34	31	50	64	66	64	81	76	64
15	57	44	34	36	32	50	64	62	64	80	77	67
13							ļ					į.
16	55	44	34	34	34	47	64	62	66	79	76	70
17	58	44	36	32	34	50	65	62	69	81	76	68
18	60	46	36	34	36	50	66	62	70	82	76	68
19	56	54	34	32	34	50	70	63	78	80	79	70
20	56	52	32	32	36	50	70	64	76	81	81	71
20				1			[		, ,			
21	54	52	31	32	37	52	69	59	78	82	82	70
22	64	51	31	31	39	50	69	62	78	82	81	70
23	54	49	32	31	37	50	69	62	78	81	82	68
24	53	48	32	32	38	52	62	68	77	80	81	69
25	53	45	34	32	· 36	52	60	72	74	80	82	66
26	52	48	36	34	42	46	60	72	74	80	75	66
	54	48	36	32	40	48	60	72	72	82	74	
27	50	46	36	32	36	50	60		73			67
28				32				73		82	78	68
29	51	46	32	32		47	62	72	74	82	76	68
30	48	44	32	32		46	62	70	76	81	77	66
31	47		38	31		48		72		82	75	
Aver- age	60	46	36	37	35	49	60	66	72	80	79	69
age	I	L	l	1	1	L	I	ļ		L	L	

### GREEN RIVER BASIN

### GREEN RIVER AT GREENSBURG, KY.

LOCATION.--At gaging station at bridge on U. S. Highway 68, 300 feet upstream from Clover Lick Creek, a quarter of a mile south of Greensburg, Green County, and 2.6 miles upstream from Russell Creek.

DRAINAGE AREA.--742 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 86°F July 15; minimum, freezing point on several days during January to March.

EXTREMES, 1949-55.--Water temperatures: Maximum, 89°F July 1-2, 23, Aug. 4, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Daily water temperatures are averages of twice-daily measurements. Data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955  $\sqrt{\text{Twice-daily measurements}}$  at approximately 7 a.m. and 5 p.m. 7

			-							·		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	52	50	44	37	40	40	66	72	72	79	73
2	76	46	49	46	36	38	38	63	72	72	79	73
3	76	43	48	48	38	42	46	66	70	73	77	71
4	76	48	47	44	37	40	47	66	72	76	77	69
5	78	45	46	44	39	37	47	67	72	78	70	72
							1			1		
6	74	44	44	42	36	39	50	68	70	76	80	70
7	72	55	39	42	35	40	48	68	69	79	76	70
8	66	58	42	40	34	40	50	69	68	80	74	72
9	66	55	40	36	31	38	50	72	65	78	78	74
	68	58	36	36	31	40	52	72	65	82	75	74
10				1	"		1	, ,,	00	, J.	1	'*
11	68	60	39	40	33	42	54	68	67	79	73	70
12	64	58	42	37	31	40	56	68	64	77	73	72
13	70	54	40	38	34	36	58	72	66	80	78	70
	66	52	38	36	36	39	58	72	67	79	78	72
14	62	51	40	34	36	38	60	74	68	83	76	70
15	٥.	"	-10	0.	30	30	00	17	00	00	1 "	10
16	61	52	39	34	37	39	60	72	68	82	78	73
	68	56	40	34	34	40	62	70	69	72	76	71
17	66	53	37	34	35	39	61	72	70	72	80	72
18	67	55	39	37	34	36	64	70	72	70	79	70
19	66	58	39	36	36	40	64	69	70	74	77	71
20		]		, ,	30	10	04	) 09	,	'3	, ,,	''
	70	51	41	36	38	38	66	70	70	74	74	71
21	64	50	39	35	35	42	68	70	70	74	75	72
22	68	53	37	31	40	40	66	70	71	80	74	74
23	66	54	42	31	36	38	69	70	68	78	76	71
24	68	53	44	31	38	36	64	68	68	79	78	70
25	•		11	31	30	36	0-1	00	00	19	10	10
	65	58	40	31	34	32	64		70	79	77	68
26	56	52	42	31	40	32 32	62	70 68	70	79		69
27	54	50	40	31	38						80	
28	56	53	40	31		36	61	68	72	76	72	70
29	52	49	44			32	60	71	72	78	74	70
30	54 54			33		35	62	72	71	76	72	69
31	04		40	35		35		72		79	70	
Aver-												
age	66	53	42	37	36	38	57	69	69	77	76	71
							L	1	L		L	

### GREEN RIVER BASIN -- Continued

### GREEN RIVER AT MUNFORDVILLE, KY.

LOCATION. --At gaging station at bridge on U. S. Highway 31W, at Munfordville, Hart County, MINANGE ARA. --1,709 square miles, approximately.
RECORDS AVAILABLE. --Chemical analyses: October 1949 to September 1955.
Water temperatures: October 1950 to September 1955.
Sediment records: April 1951 to September 1955.

EXTREMES, 1954-55. -Dissolder Maximum, 178 ppm Nov. 11-22; minimum, 74 ppm Mar. 23-25.

Bardness: Maximum, 156 ppm Sept. 6-30; minimum, 178 ppm Nov. 11-22; minimum, 178 ppm Mar. 22-25.

Specific conductance: Maximum daily, 332 micromhos Sept. 23; minimum daily, 82.9 micromhos Mar. 24.

Setiment concentrations: Maximum daily, 1.430 ppm Mar. 16; minimum daily, 1.50 ppm Nov. 10.0 is several days during September.

Setiment concentrations: Maximum daily, 1.430 ppm Mar. 17; minimum daily, 1.50 ppm Nov. 1.0. issolved daily 35.200 tons Mar. 17; minimum daily, 1.50 ppm Nov. 1.0. issolved daily 35.200 forus Mar. 17; minimum daily, 1.50 ppm Nov. 1.0. issolved daily 35.205.

Setiment loads: Maximum daily, 35.200 forus Mar. 27: minimum, 74 ppm Mar. 23-25, 1955.

Hardness: Maximum daily, 35.200 forus Mar. 23-25, 1955.

Hardness: Maximum daily, 35.200 forus Mar. 23-25, 1955.

Specific conductance: Maximum daily, 3.180 ppm June 14, 1952; minimum daily, 1 ppm on several days during December 1952, January 1954, and September 1955.

December 1953, January 1954, and September 1955.

Maximum daily, 155,000 tons Mar. 23-24, 1952; minimum daily, 1 ppm on several days during October to December 1953, January 1954, and September 1955.

Maximum daily, 1 ppm on several days during October to December 1953, January 1954, and September 1955.

Maximum daily, 1 ppm on several days during October to December 1953, January 1954, and September 1955.

Maximum daily, 1 ppm on several days during October to December 1953, January 1954, and September 1955.

Maximum daily, 1 ppm on several days during October to December 1953.

Maximum daily, 1 ppm on several days during October to December 1953.

Maximum daily, 1 ppm on several days during October to December 1953.

Maximum daily, 1 ppm on several days during October to December 1953.

Maximum daily, 1 ppm on several days during October to December 1953.

Maximum daily, 1 ppm on several days during October to December 1955.

October 1954 to September 1955 given in WSP 1385

	Color		20	9	-	73	9	20	10	20	13	22	32	9	9	<b>-</b> -	es	20	12	<b>∞</b>
Chemical analyses, in parts per million, water year October 1954 to September 1955	Hď		1	7.6	8.2	8.7	7.6	7.5	7.7	2.5	7.7	7.5	9.7	8.1		7.7	7.5	7.2	7.6	7.3
	Specific conduct- ance (micro- mhos at 25°C)		275	278	308	321	308	240	291	228	213	244	160	225	230	215	234	139	201	145
	Hardness as CaCO,	Non- carbon- ate	14	15	11	12	13	20	87	23	22	20	18	52	21	ន	22	14	20	7
		Calcium, mag- nesium	134	134	143	148	148	115	140	101	66	112	7.4	111	110	101	113	99	66	11
	Dissolved solids (residue on evaporation at 180°C)		163	166	173	177	178	140	166	130	125	128	96	136	138	126	135	96	119	86
	Nitrate (NO ₃ )		2.6	2.5	2.2	1.9	1.1	1.8	2.4	4.3	9.9	9.9	8	2.8	3.8	4.7	3.5	4.5	4.8	4.1
	Fluor ide (F)		0.1	7	۲.	-:	7.	-:	-:	67	2.	67	67	7	7	Ξ.	7	7.	-:	=:
	Chloride (C1)		8.0	8.6	5.4	12	11	6,5	8,0	5.0	8.4	12	80	5.5	6.0	5.0	4.5	2.3	3.6	3.7
	Sulfate (SO ₄ )		12	12	13	14	15	19	23	20	19	81	16	18	18	16	20	12	13	9
	Bicar- bonate (HCO ₃ )		146	146	162	167	164	115	138	101	83	8	2	106	108	100	111	64	86	2
	Potas- sium (K)		2.0	2.1	1.7	2.1	1.7	2.5	2.0	1.6	æ	==		1.0	æ.	ı,	1.0	1.7	1.2	1.5
	Sodium (Na)		5.1	5.2	0.9	4.7	6.3	3.9	8.4	3.5	3.3	4.	5	3.0	3.1	8.2	3.2	2.3	2.2	2.3
	Mag- nesium (Mg)		7.0	8.8	7.0	7.1	7.3	6.0	1.0	5.6	5.7	æ.	8	6.5	6.0		6.2	3.4	4.9	4.0
	Cal- cium (Ca)		42	43	48	48	47	8	4	33	ಽ	ş	9	ž	34	83	35	21	32	23
	Fron (Fe)		0.01	10.	8	<u>.</u>	.02	80.	80.	70.	.26	.38	90	.02	.02	5	<u>\$</u> .	=	.05	87.
	Silica (SiO ₂ )		10	8,2	8.1	7.0	8.9	0.9	7.9	7.0	9	0.	6.1	8.7	6.8	6.3	6.9	7.1	8.3	7.7
	Mean discharge (cfs)		158									2, 445	7.770	1,559	1,392	1,336	2, 798	18, 100	4,068	16, 180
	Date of collection		Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-22	Nov. 23-30	Dec. 1-6	Dec. 7-20	Dec. 21-25	Dec. 25-39	Dec. 31	Jan. 2-14, 1955	Jan. 15-24	Jan. 25-31	Feb. 1-6	Feb. 7-10	Feb. 11-22	Feb. 23-28

		GREEN RIVER BASIN
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94 100 102 136 93 97 74	122 131 110 141 120 139 139	137 101 101 173 174 124 124 177 177
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11 7.5 8.4 8.8 8.7 9.2	7.0 6.6 7.7 7.5 8.4 8.4	9.8 8.5 10 11 11 7.3 9.3 7.5 8.1
22,750 13,650 7,043 3,426 13,480 17,700 31,770 4,993	1,713 2,025 897 1,614 1,028 2,166 9,310	1,594 2,157 887 1,913 713 986 278 278 278 23 204
Mar 1-4, 1956 Mar 5-8 Mar 12-16 Mar 17-20 Mar 23-25 Mar 23-25 Mar 26-Apr 1	Apr. 2-10 Apr. 11-26 Apr. 27-30 May 1-15 May 10-21 May 22-31 June 12-15	June 16-26 1,594 9.8 1.13 June 21-29 2,157 8.5 0.02 June 30-July 9 8.7 10 0.00 July 10-13 1,913 11 0.00 July 10-14 8.8 1,913 11 0.10 July 14-4 g. 8 1,913 11 0.10 Aug. 19-14 986 7.3 0.01 Sept. 6-30 223 7.5 0.00  Time-weighted average a 2,664 8.1 0.07  a Represents 100 percent of days and 99 percent of runoff

### GREEN RIVER AT MUNFORDVILLE, KY .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at approximately 7 a.m../

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
										<u> </u>		
1	68	53	43		35	51	49	63	66	73	79	69
2	69	46	43	44	37	51	52	63	66	73	79	67
3	70	43	42	44	37	52	52	64	67	75	79	
4	70	45	40	46	35	54	54	65	68	75	79	69
5	70	45	43	48	37	55	57	67	70	77	79	70
6	71	45	39	50	43	55	59	66	70	76	78	68
7	63	45	39	48	43	50	58	67	68	72	80	68
8	62	45	38	45	42	48	46	67	65	78	78	68
9	62	46	38	45	41	47	45	65	63	77	74	69
10	63	48		44	42	50	57	65	64	75	74	71
11	65	47	37	42	41	54	57	67	62	69	76	70
12	65	49	38	41	38	56	60	65	62	69	74	61
13	67	49	40	40	35	56	63	65	62	69	72	64
14	66	49	40	37	35	54	62	66	62	76	74	66
15	61	49	41	38	35	57	61	66	62	74	73	66
16	60	52	40	37	38	57	62	66	64	75	74 74	66
17	58	53	41	37	40	54	64	65	65	75	74	66
18	58	55		37	40	52	65	65	67	75	74	66
19	55	55	40	37	42	49	67	66	69	76	75	66
20	54	54	38	36	45	50	67	66	70	77	75 75	66 66
21	53	52					1		-			
22	53 52		38	37	45	54	66	67	70	75	77 76	67
23	52 52	50	38	38	45	53	65	69	72	77	76	68
24	52 53	49	37	38	44	50	65	70	72	77	75	69
25		48	37	36	44	50	66	70	72	77	74	68
45	54		36	36	43	49	63	70	70	76	72	66
26	56	45	37	35	45	47	60	70	69	75	71	66
27	58	45	38	35	48	45	59	72	69 69	76	71 71	67
<b>2</b> 8	56	45	41	33	50	43	59	74	69	78	73	68
29	55	44	45	33		44	60	76	70	77	71	65
30	50	41	44	33		45	62	69	72	77	73	65
31	43		45	33		47		65		79	70	
Aver- age	60	48	40	39	41	51	59	67	67	75	75	67

### GREEN RIVER BASIN

### GREEN RIVER BASIN -- Continued

### GREEN RIVER AT MUNFORDVILLE, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955 October November December Suspended sediment Suspended sediment Suspende 1 sediment Mean Mean Mean Mean Day Mean Mean disdisdis-Tons Tons Tons concenconcenconcencharge charge charge per per day per tration tration tration (cfs) day (cfs) day (cfs) (ppm) (ppm) (ppm) 1. . . . . . 126 17 R 88 15 450 22 27 **2**. . . . . 220 17 10 92 16 428 11 13 3. . . . . 296 14 11 92 96 12 3 362 7 7 4. . . . . . 215 24 14 318 15 4 5. . **. .** . 22 5 10 10 105 17 324 12 e 1,000 6.... 144 20 8 109 16 5 5 1,300 22 1,740 1,360 1,000 276 7. . . . . . 1, 300 122 100 17 8. . . . . 105 6 5 152 558 20 114 15 9. . . . . 96 20 114 15 67 181 10..... 92 4 б 1,010 43 117 16 122 11..... 1,030 25 88 18 5 70 47 126 14 12. . . . . . 22 56 114 23 122 13 4 944 13. . . . . 1,800 114 22 e1,500 118 13 4 14. . . . . 3, 140 2, 720 295 2,500 e 65 114 11 15. . . . . 396 215 230 114 2 190 1,400 16..... 2,070 760 275 55 41 114 7 2 136 17. . . . . ž 1,470 1,240 1,660 280 156 118 102 405 118 8 18..... 225 36 22 126 8 75 251 19. . . . . 215 7 68 305 20. . . . . 181 27 13 167 7 3 2,220 97 581 1,120 1,830 385 153 17 370 78 7 sa 1, 600 22. . . . . 135 15 5 1,140 248 763 1,280 131 23. . . . . . 122 17 6 246 1,020 24 66 127 24. . . . . 114 31 10 467 50 63 860 17 b40 25. . . . . 10 20 105 30 8 362 33 32 752 **2**6..... 96 30 8 296 19 15 662 8 14 27. . . . . 96 27 7 265 590 8 13 28. . . . . . 96 96 27 7 260 13 a 632 18 31 29. . . . . s 5. 920 3,240 517 22 275 12 9 6 5 4 30. . . . . 14, 200 10, 300 101 19 7,100 7,770 740 490 18 16 412 17 31. . . . . . 92 Total. 4,848 684 7,617 2,842 52,322 42, 168 --January March February 19,900 24,000 25,100 21,400 22,200 19,000 1..... 5,730 398 193 s 3, 140 788 ß 3 2. . . . . . 3,100 88 736 1,020 s 133 342 42 3. . . . . 2,170 352 116 280 60 1,910 598 1,660 4. . . . . . 2, 190 1,480 22,000 204 12, 100 5. . . . . . 1,370 26 96 2, 160 95 555 13,800 208 7,750 8,720 17,700 20,200 1, 210 24 30 78 707 s 18,900 11,400 14,500 436 13,400 7. . . . . . 92 32,000 12,900 9,250 1,130 330 670 8. . . . . . 1,100 50 22, 400 14,900 230 411 9. . . . . 2,680 1,070 1,010 27 78 20,300 258 14, 100 11,300 RR 10. . . . . 68 1.070 5,820 18 49 14, 200 72 s 2, 930 11. . . . . 541 1,060 19 54 5, 140 61 846 4,010 50 398 1,680 1,910 3,280 2,780 2,360 56 20 45 12. . . . . . 70 318 3,560 538 37 278 13. . . . . . 38 196 2.960 160 31 198 14..... 1,800 27 131 2,510 17 115 1,530 23 2,450 13 86 2,240 117 708 s 28,500 106 1 430 16. . . . . . 1 390 13 49 2,610 15 6 470 1,020 17..... 1,270 1,140 3,370 3,870 3,790 12,800 13,900 35, 200 34 15 255 10 28 428 12,400 18. . . . . 330 41 19. . . . . 1,050 27 276 206 8,230 20. . . . . 962 3 8 3,240 19 166 12,400 88 2,950 13,500 21,900 31,000 34,600 890 10 24 99 3,310 37 s 364 228 s8,850 27,700 30,900 33,400 22. . . . . . 1,180 31 12,000 19,200 566 s 19,800 20,700 469 23. . . . . . 2,130 57 328 400 369 24. . . . . . 2,380 81 520 20,800 316 17,700 358 16, 100 25. . . . . . 2,260 53 323 20, 300 172 9,430 29,700 201 16,100 5,550 3,570 26. . . . . . 1,810 26 127 11,900 1,740 235 s 10,700 54 27..... 1,430 1,200 35 8,760 300 s 7, 960 60 899 28..... 23 16,000 580 25,000 40 386 29. . . . . . 225 1.020 в 16 2.980 28

30. . . . . .

31. . . . .

848

782

6 5

14

234, 958

b 10

7,344

2 570

__

__

198,772

24

120

340,599

Total . 49, 272 e Estimated.

s Computed by subdividing day.

^{401,450} a Computed from partly estimated concent ation graph. b Computed from estimated concentration graph.

### GREEN RIVER AT MUNFORDVILLE, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

1 2 3 4 5	Mean dis- charge (cfs)	April Suspende Mean	d codiment	1	May			June	
1 2 3 4 5	dis- charge (cfs)		d codimont						
1 2 3 4 5	dis- charge (cfs)	Mean	a seatment		Suspende	d sediment		Suspended	d sediment
1 2 3 4 5	charge (cfs)		T	Mean	Mean		Mean	Mean	
2 3 4 5	(cfs)	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
2 3 4 5		tration	per	charge	tration	per	charge	tration	per
2 3 4 5	1 960	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
2 3 4 5		20	106	1 220		83	720		196
3 4 5	1,760	18	86	1,230 1,050	25		728	100	
4 5 6	1,660	17	76	920	18	51	632	45	77
6	1,000				12	30	548	33	49
6	1,590	16	69	824	8	18	484	32	42
	1,460	15	59	740	7	14	445	22	26
	1 040	14				l I			
	1,340		51	668	6	11	434	31	36
	2, 180	29	171	608	7	11	1,480	523	s 2, 280
	2, 180 1, 790	39	230	572	9	14	2,720	570	4, 190
9	1,790	26	126	530	10	14	3, 100	338	2, 830
10	1,460	34	134	489	9	12	4,730	348	4, 440
11	1,340	37	134	472	9	11	0 500	339	7 000
11		46		484	9	12	8,520	368	7,800
12	1,400	147	174 782	602			11,600		11,500
13	1,970				18	s31	12,000	223	7,220
14	2,640	138 38	984	1,850	52	260	8,670	90	2,110
15	2, 050	30	210	2,410	84	546	4,970	77	1,030
10	1 790							ا مما	
16	1,730 1,500	21	98	2,670	119	858	3,060	63	520
17	1,000	13	53	2,180		e1,700	2, 230	51	307
18	1,300	12	42	1,740	242	1,140	1,720	50	232
19	1, 180	11	35	1,270	78	267	1,380	34	127
20	1,060	9	26	992	51	136	1,150	36	112
.	1 000	١	1!	l		ا ــ ا		!	
21	1,000	12	32	830	27	60	986	65	173
22	962	12	31	938	30	76	872	22	52
23	944	8	20	980	51	135	770	17	35
24	2,430	121	s 952	782	60	127	716	15	29
25	3,530	405	3,860	872	130	306	1,220	146	s 585
			l l						
26	3, 350	115	1,040	968	152	397	3,430	744	6,890
27	2,650	59	422	1, 180	66	210	3,390	574	s 5, 500
28	2,180	37 25	218	1,090	63	185	1,880	160	812
29	1,800		122	1, 210		e750	1,200	83	269
30	1,470	- 25	99	1,400	510	1,930	908	48	118
31				860	355	824			
Total.	53,866		10,442	33, 411		10, 219	85,973		59,587
		July			A			Septe aber	
					August				
1	746	34	68	644	43	75	181	6	3
2	638	28	48	478	30	39	172	8	4
3	566	23	35	396	31	33	163	12	5
4	572	17	26	346	32	30	158	5	2
5	484	13	17	340	27	25	144	7	3
	506	١					l	_	_
6		16	22	324	31	27	140	7	3
7	638	44	76	357	33	32	135	3	1
8	950	83 950	213	1,660	600	sa 3, 100	126	7	2 2
9	2,860		sa10,000	974	446	1,170	118	5	2
10	4, 280 •	1,270	s15,500	1,030	278	773	114	2	1
,,	1 610	410	الميميا	,					
12	1,610	418 188	s1,940	1,430	230	888	109	4	1
13	1,010 752		513	1,060	198	567	105	3	1
14	608	86 67	175	770	131 74	272	101	3	1
15			110	650		130	96	3	1
13	536	41	59	500	39	53	96	2	1
16	518	99	AE	410	20	ا ہوا		2	(+)
17	489	32 32	45 42	418 357	30	34 25	92 92	h ² l	(t)
18	469 445	27	32		26 27	25 23			
19	445 401	28	32	318		23 17	92 88	ll i	
	1,440	40	5 400	280	23			[	
20.	1,420	1	e 5, 400	255	21	14	88	)	
20	872	691	s1,810	235	18	11	88		
20		130	226	230	17	10	88	} 1	(t)
21		92	185	423	21	24	92		
21	644		150	512	22	30	114		
21 22 23	644 746	79		335	25	23	114	1 1	
21 22 23 24	644 746 704	79	PR 400 II		20 1	40			
21 22 23	644 746		e 8, 400	555		i i	1	1	
21 22 23 24 25	644 746 704 1,940		1 1		1	10			
21 22 23 24 25	644 746 704 1,940	848	s3,160	291	13	10	114	]	,
21 22 23 24 25 26	644 746 704 1,940 1,240 710	848 210	s 3, 160 402	291 275	13 10	7	114 114	2	1 2
20	644 746 704 1,940 1,240 710 548	848 210 97	s 3, 160 402 144	291 275 250	13 10 7	7 5	114 114 118	6	1 2
20	644 746 704 1,940 1,240 710 548 596	848 210 97 65	s 3, 160 402 144 104	291 275 250 220	13 10 7 7	7 5 4	114 114 118 114		ī
20	644 746 704 1,940 1,240 710 548 596 698	848 210 97 65 90	s 3, 160 402 144 104 170	291 275 250 220 206	13 10 7	7 5	114 114 118	6	1 2 1 e 15,000
20	644 746 704 1,940 1,240 710 548 596 698 860	848 210 97 65	s 3, 160 402 144 104 170 158	291 275 250 220 206 196	13 10 7 7	7 5 4 4 2	114 114 118 114 3,020	6	e 15, 000
20	644 746 704 1,940 1,240 710 548 596 698 860 29,607	848 210 97 65 90 68	s 3, 160 402 144 104 170 158 49, 260	291 275 250 220 206 196	13 10 7 7	7 5 4	114 114 118 114	6	e 15,000  15,038
20	644 746 704 1,940 1,240 710 548 596 698 860 29,607	848 210 97 65 90 68 	s 3, 160 402 144 104 170 158	291 275 250 220 206 196 15, 760	13 10 7 7	7 5 4 4 2	114 114 118 114 3,020	6	e 15, 000

e Estimated. s Computed by subdividing day.

t Less than 0.5 ton.
a Computed from partly estimated concentration graph.

# GREEN RIVER AT MUNFORDVILLE, KY. --Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube: D. decantation: P. pipette; S. siewe: N, in native water;

	Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BWCM	BSWCM	BSWCM	BSWCM
		1.000																		
		0.500	:	1	1	1	;	;	1	;	;	;	100	;	1	100	;	;	;	;
		0.350																		
	llimeters	0.250		;	100	:	;	;	;	901	-	;	66	;	;	66	;	;	!	;
	ize, in mi	0, 125	66	001	66	100	100	9	100	66	100	;	66	100	;	66	i	i	;	:
	Percent finer than undicated size, in millimeters	0.062	86	88	66	66	66	66	66	86	86	100	96	66	100	66	;	100	100	100
ediment	ner than 11	0. 031	96	97	97	96	96	86	86	96	66	96	96	66	86	86	100	66	66	86
Suspended sediment	Percent fü	0.016	88	92	92	78	87	88	92	88	83	88	87	94	06	92	86	92	96	94
PS.		0.008	72	8	82	20	71	74	84	81	62	75	71	82	73	83	42	11	91	83
		0.004	64	69	69	45	55	9	02	69	63	90	54	20	26	63	99	28	77	67
		0, 002	51	8	28	8	49	94	3	23	46	38	48	49	42	46	25	45	65	52
	Concentration of suspension	analyzed (ppm)	578	248	789	1,240	969	1,130	1,040	494	844	1.430	749	1,160	925	945	1,200	2,650	1,460	1,750
	Concentration	of sample (ppm)	352	663	237	717	377	663	354	280	476	752	422	350	501	531	711	1.510	944	1.060
Wetor	tem-	ature (°F)																		
	Discharge	(crs)	3,260	7,940	20, 200	11,900	19,300	16,000	24,000	25,300	12, 200	13,000	20, 200	34,900	1.690	1,190	3, 220	5,330	920	1.340
	Time		7:00 a.m.	6:15 a.m.	4:10 p.m.	10:50 a.m.	10:30 a.m.	10:20 a.m.	10:10 a.m.	7:00 a.m.	3:30 p.m.	10:40 a.m.	7:00 a.m.	11:15 a.m.	7:00 a.m.	7:00 a.m.	7:00 a.m.	7:00 a.m.	7:00 a.m.	7:00 a m
	Date of collection		Dec. 14, 1954		٠.			28	Mar. 2	Mar. 3	Mar. 6	Mar. 17	Mar. 22	Mar. 24	May 30	June 7	June 26	July 10	July 21	July 26

## BARREN RIVER AT BOWLING GREEN,

.--At bridge on U. S. Highway 31W and 68, 600 feet upstream from gage and old bridge, at Bowling Green, Warren County, 6 miles downstream from Drakes Creek, and 9.0 miles upstream from Jennings Creek

DRAINAGE AREA. --1,680 square miles, approximately upon community of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special part of the Carlo and a special p

Max 2 3338 Date Apr. May July Min 46 - 46 Max 52. Date Nov. Mar. Mar. Min 1 8 2 Max 0ct. 8 0ct. 18 0ct. 30 Date

Temperature ('F) of water

1 2 2

Temperature (°F) of water, water year October 1954 to September 1955

October November December Transcer Webster Mesch	Nomember December Towns	December Tomore	December Tomore	Younging	Younging	Tomosas Tohanam	Tourname ethyl archib	Fohms etnyt arcond	my arcond		No.	T named	times moderapi	<u> </u>	Mov	1	Time	-	July	+	Angust	$\vdash$	Sentembe	
November December samuery	November December samuery	December damary	December damary	damary	damary	+	+	2	8	٦	i i		T.	1		1		1		1	Sugar.	7		
max min max min max min max min ma	max min max min max min m	min max min max min m	in max min max min m	min max min m	max min m	min m	8	2	ахп	min	max	min n	max	min r	max 1	min	max	min m	max	min	max mi	In max	E	_
52 50 46 45 52 50	52 50 46 45 52 50	50 46 45 52 50	46 45 52 50	45 52 50	52 50	20	L	-	01	39	26	53	25	51	99	65	11	11	80	19	_	_		_
50 48 45 45 50	50 48 45 45 50	48 45 45 50	45 45 50	45 50	20		20		41	40	26	28	8	22	2	8	12	11	81	80	_	_	_	
48 47 45 44 50	48 47 45 44 50	47 45 44 50	45 44 50	44 50	20	_	20		42	41	26	26	32	23	88	67	12	7	83	8	_	_	-	
47 46 44 44 50	47 46 44 44 50	46 44 44 50	44 44 50	44 55	8		2		42	42	26	28	28	22	89	89	72	1	8	82	_	_		_
4	46 44 44 44 53	44 44 44 53	44 44 53	44 53	53	_	22		42	42	26	28	8	28	2	88	22	71	28	8	*			
44 44 44 42 54	44 44 44 42 54	44 44 42 54	44 42 54	42 54	24		S		46	42	57	26	9	28	20	69	55	72	84	25		83 78		
69 44 44 42 42 54	44 44 42 42 54	44 42 42 54	42 42 54	42 54	25		25		46	46	22	23	81	9	2	20	74	- 22	84	<b>8</b>			_	٠.
67 44 44 43 42 54	44 44 43 42 54	44 43 42 54	43 42 54	42 54	54		22		46	46	S	8	9	20	Z	2	72	69	2	<b>2</b> 5	_	_	_	
44 44 43 43 52	44 44 43 43 52	44 43 43 52	43 43 52	43 52	25		22		46	46	20	ಜ	29	28	F	2	69	89	84	2	_	_	_	
67 47 44 43	47 44 43 41 52	44 43 41 52	43 41 52	41 52	25		<u>8</u>		47	46	21	8	8	28	2	2	89	19	82	\$	82	_	_	
47 47 41 41 50	47 47 41 41 50	47 41 41 50	41 41 50	41 50	20		64		48	46	25	21	- 09	- 69	- 02	70	67	99	*	25	82	82 77	16	
68 67 48 47 41 41 49 48	48 47 41 41 49	47 41 41 49	41 41 49	41 48	48	_	48		46	44	23	22	62	8	2	2	99	99	2	8	8		-	
68 48 48 42 41 48	48 42 41 48	48 42 41 48	42 41 48	41 48	848	_	46		44	42	25	S	8	- 62	2	20	99	99	2	<b>%</b>	8	_	_	_
48 48 44 42 46	48 48 44 42 46	48 44 42 46	44 42 46	42 46	46	_	44		42	41	22	z	63	8	2	69	99	99	82	<b>25</b>	<u></u>			
48 48 44 44	48 48 44 44 44	48 44 44 44	44 44 44	44 44	44	_	4		41	4	55	22	\$	8	69	69	99	- 64	<b>*</b>	<b>8</b>	£	_	_	_

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445555 95 95 95 95 95 95 95 95 95 95 95 95	:	75
78 78 80 80 80 81 81 81	88888	81
222222222222222222222222222222222222222	288888	81
2 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8 2 2 2 2 2 2	83
**************************************	228822	48
684 772 773 778 778 778	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12
812222	777 778 787 87	72
6888888888	70 72 73 72	69
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84 40 50 50 44 80 50 50 50 50 50 50 50 50 50 50 50 50 50	48 48 47 46	48
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10. 18. 20. 22. 23. 23.	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	Average

### BARREN RIVER AT BOWLING GREEN, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955

			ded sedime	nt, water yea	r October 19	54 to Septer	nber 1955		
Ĺ		October			November		L	December	
Г	7	Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean	Mean		Mean	Mean		Mean	N*∘an	
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
i	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	297	58	5	152	28	11	528	103	147
2	725	54	106	149	18	7	476	100	a 130
3	2,400	265	s1,840	146	14	6	394	54	57
4	1,330	308	1,110	142	18	7	349	12	ii
5	623	156	262	144	20	8	352	5	b5
						·	1	-	
6	433	115	134	149	17	7	1,540	89	s 572
7	335	68	62	159	8	3	4,240	782	8,950
8	269	50	36	166	10	4	2,390	259	s1,820
9	238	30	19	174	13	6	1,370	78	288
10,	225	36	22	174	5	2	1,050	38	108
	1		1	(			{		1
11	208	38	21	172	4	2	1,130	27	82
12	195	44	23	162	5	2	1,020	28	77
13	195	42	22	156	4	2	1,660	46	s 230
14	179	37	18	149	13	5	3,500	158	1,490
15	425	110	sb140	142	10	4	2,940	100	794
10	750	100	!			ا ہا	2 000	45	005
16	750 755	122 108	247   220	142	12	5	2,090	47	265
17	536	108 51	74	156 154	15 14	6	1,550	28	117
18	384	33	34				1,220	14	46
20	314	33 22	19	162 182	13 32	6 16	1,300	12 14	42 54
20	313	22	, ,,	102	32	10	1,430	14	242
21	269	19	14	282	90	sb 85	1,170	8	25
22	236	22	14	825		e 374	948	8	20
23	214	22	13	600	95	154	815	6	13
24	198	21	ii	430	65	75	735	, š	l š
25	185	29	14	349		e 50	660	3	) š
1			!	1					1
26	172	51	24	302		e 35	587	3	5
27	159	36	15	280		e 18	540	4	6
28	154	17	7	263		e 10	592	17	s 29
29	154	21	9	260		e 6	3,860	277	s3,040
30	156	33	14	299	14	11	8,370	542	12, 200
31	154	34	14				8,610	336	7,810
Total.	12,867		4,563	7,022		933	57,416		38,446
		January			February			March	
	4 040						<del></del>		
1	4,940 3,140	113 58	s1,620 492	770	3 5	6	13,800	196	7,300
3	2,370	34	218	805 1,530	9	11 37	16,600 15,400	415 272	18,600 11,300
4	1,880	25	127	1,790	14	68	10,200	101	2,780
5	1,570	20	85	1,640	25	111	6,620	128	2, 290
	-,		"	1.0.0		***	0,020	120	2,200
6	1,380	17	63	6,570	364	s 8, 480	6,730	182	3,310
7	1,230	13	43	18,700	594	30,000	10.600	375	10,700
8	1,090	16	29	20,400	348	19,200	11,000	205	6,090
9	964	9	23	17,500	127	6,000	7,660	55	1,140
10	910	7	17	8,170					1,140
!					57	1,260	5,110	48	662
11	05.4		[						662
17	976	7	18	4,600	37	460	4,130	42	662 468
12	1,370	7 8	18 30	4,600 3,900	37 35	460 368	4,130 3,800	42 51	662 468 523
12	1,370	7 8 14	18 30 60	4,600 3,900 3,620	37 35 23	460 368 225	4,130 3,800 5,000	42 51 356	662 468 523 4,810
12 13 14	1,370 1,590 1,490	7 8 14 24	18 30 60 96	4,600 3,900 3,620 2,650	37 35 23 16	460 368 225 114	4,130 3,800 5,000 4,440	42 51 356 209	468 523 4,810 2,500
12	1,370	7 8 14	18 30 60	4,600 3,900 3,620	37 35 23	460 368 225	4,130 3,800 5,000	42 51 356	662 468 523 4,810
12 13 14 15	1,370 1,590 1,490 1,310	7 8 14 24 15	18 30 60 96 53	4,600 3,900 3,620 2,650 2,600	37 35 23 16 13	460 368 225 114 91	4,130 3,800 5,000 4,440 3,520	42 51 356 209 94	468 523 4,810 2,500 893
12 13 14 15	1,370 1,590 1,490 1,310	7 8 14 24 15	18 30 60 96 53	4,600 3,900 3,620 2,650 2,600	37 35 23 16 13	460 368 225 114 91	4,130 3,800 5,000 4,440 3,520 4,950	42 51 356 209 94	468 523 4,810 2,500 893 s 6,030
12 13 14 15 16	1,370 1,590 1,490 1,310 1,190 1,120	7 8 14 24 15	18 30 60 96 53 32 21	4,600 3,900 3,620 2,650 2,600 2,740 3,130	37 35 23 16 13	460 368 225 114 91 140 262	4,130 3,800 5,000 4,440 3,520 4,950 9,750	42 51 356 209 94 387 719	662 468 523 4,810 2,500 893 \$6,030 18,900
12	1,370 1,590 1,490 1,310	7 8 14 24 15	18 30 60 96 53 32 21	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240	37 35 23 16 13 19 31 27	460 368 225 114 91 140 262 236	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300	42 51 356 209 94 387 719 201	468 523 4,810 2,500 893 \$6,030 18,900 5,590
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000	7 8 14 24 15 10 7 4	18 30 60 96 53 32 21	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960	37 35 23 16 13 19 31 27 16	460 368 225 114 91 140 262 236 128	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300	42 51 356 209 94 387 719 201 292	662 468 523 4,810 2,500 893 \$6,030 18,900 5,590 12,800
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832	7 8 14 24 15 10 7 4 4	18 30 60 96 53 32 21 11 10	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240	37 35 23 16 13 19 31 27	460 368 225 114 91 140 262 236	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900	42 51 356 209 94 387 719 201	468 523 4,810 2,500 893 s 6,030 18,900 5,590 12,800 6,850
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832	7 8 14 24 15 10 7 4 4 4	18 30 60 96 53 32 21 11 10 9	4, 600 3, 900 3, 620 2, 650 2, 600 2, 740 3, 130 3, 240 2, 960 2, 660	37 35 23 16 13 19 31 27 16 13	460 368 225 114 91 140 262 236 128	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900	42 51 356 209 94 387 719 201 292	468 523 4,810 2,500 893 s 6,030 18,900 5,590 12,800 6,850
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832 795	7 8 14 24 15 10 7 4 4 4	18 30 60 96 53 32 21 11 10 9	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960 2,660 3,120 13,500	37 35 23 16 13 19 31 27 16 13	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900	42 51 356 209 94 387 719 201 292 155	468 523 4,810 2,500 893 s 6,030 18,900 5,590 12,800 6,650
12	1,370 1,590 1,490 1,310 1,120 1,120 1,000 898 832 795 880 2,060	7 8 14 24 15 10 7 4 4 4 6 8 20	18 30 60 96 53 32 21 11 10 9	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960 2,660 3,120 13,500 23,800	37 35 23 16 13 19 31 27 16 13 67 540 368	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400 23,600	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700	42 51 356 209 94 387 719 201 292 155 205 358 654	468 523 4,810 2,500 893 \$6,030 18,900 5,590 12,800 6,650
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832 795 880 2,060 2,300	7 8 14 24 15 10 7 4 4 4 4 6 8 20 32	18 30 60 96 53 32 21 11 10 9	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960 2,660 3,120 13,500 23,800 23,200	37 35 23 16 13 19 31 27 16 13 67 540 368 226	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400 23,600 14,200	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700 36,800	42 51 356 209 94 387 719 201 292 155 205 358 654 358	662 468 523 4,810 2,500 893 86,030 18,900 5,590 12,800 6,650 10,200 30,700 91,300 83,800
12	1,370 1,590 1,490 1,310 1,120 1,120 1,000 898 832 795 880 2,060	7 8 14 24 15 10 7 4 4 4 6 8 20	18 30 60 96 53 32 21 11 10 9	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960 2,660 3,120 13,500 23,800	37 35 23 16 13 19 31 27 16 13 67 540 368	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400 23,600	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700	42 51 356 209 94 387 719 201 292 155 205 358 654	468 523 4,810 2,500 893 \$6,030 18,900 5,590 12,800 6,650
12	1,370 1,590 1,490 1,310 1,120 1,120 1,000 898 832 795 880 2,060 2,300 1,940	7 8 14 24 15 10 7 4 4 4 6 8 20 32 17	18 30 60 96 53 32 21 11 10 9 13 19 111 199 89	4, 600 3, 900 3, 620 2, 650 2, 600 2, 740 3, 130 3, 240 2, 960 2, 660 3, 120 13, 500 23, 800 18, 200	37 35 23 16 13 19 31 27 16 13 67 540 368 368 226 66	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400 23,600 14,200 \$3,400	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700 36,800 20,700	42 51 356 209 94 387 719 201 292 155 205 358 654 358 63	662 468 4810 2,500 893 86,030 18,900 5,590 12,800 6,650 10,200 30,700 91,300 838,800 3,520
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832 795 880 2,060 2,300 1,940	7 8 14 24 15 10 7 4 4 4 6 8 20 32 17	18 30 60 96 53 32 21 11 10 9 13 19 111 199 89	4, 600 3, 900 3, 620 2, 650 2, 600 2, 740 3, 130 2, 960 2, 660 2, 660 23, 800 23, 800 23, 200 18, 200 8, 090	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66	460 368 225 114 91 140 262 236 128 93 5713 \$21,400 23,600 14,200 1,660	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 118,400 31,800 51,700 36,800 20,700 9,860	42 51 356 209 94 387 719 201 292 155 205 358 654 458 63	468 468 4,810 2,500 893 s 6,030 18,900 5,590 12,800 6,650 10,200 30,700 91,300 838,800 33,520 1,920
12	1,370 1,590 1,490 1,310 1,120 1,120 1,000 898 832 795 880 2,060 2,300 1,940 1,620 1,350	7 8 14 24 15 10 7 4 4 4 4 6 8 8 20 32 17 13 10	18 30 60 96 53 32 21 11 10 9 13 19 111 199 89	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,960 2,660 3,120 13,500 23,800 23,200 18,200 8,090 6,170	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66 76	460 368 225 114 91 140 262 236 128 93 \$713 \$21,400 23,600 14,200 \$3,400	4, 130 3, 800 5, 000 4, 440 3, 520 4, 950 10, 300 16, 300 15, 900 18, 400 31, 800 51, 700 36, 800 20, 700 9, 860 5, 630	42 51 356 209 94 387 719 201 292 155 205 358 654 358 63	468 2 468 523 4,810 2,500 893 86,030 18,900 5,590 12,800 6,850 10,200 30,700 91,300 \$38,800 3,520 1,920 882
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 898 832 795 880 2,060 2,300 1,940 1,620 1,350 1,170	7 8 14 24 15 10 7 4 4 4 6 8 20 32 17	18 30 60 90 53 32 21 11 10 9 13 19 111 199 89	4, 600 3, 900 3, 620 2, 650 2, 600 2, 740 3, 130 3, 240 2, 660 2, 660 3, 120 13, 500 23, 200 18, 200 8, 090 6, 170 11, 700	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66 76 104	460 368 225 114 91 140 226 128 93 \$ 713 \$ 21,400 14,200 14,200 53,400 1,660 1,730	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700 36,800 20,700 9,860 5,630 4,200	42 51 386 209 94 387 719 201 292 155 205 358 654 358 63 72 58	662 468 523 4,810 2,500 893 86,030 18,900 5,590 12,800 6,650 10,200 30,700 91,300 838,520 1,920 442
12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 1	1,370 1,590 1,490 1,310 1,120 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	7 8 14 24 15 10 7 7 4 4 4 4 6 8 20 32 2 17 13 10 4 3	18 30 60 96 53 32 21 11 10 9 11 11 199 89 57 36 13	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,660 2,660 3,120 13,500 23,800 23,200 18,200 8,090 6,170 11,700	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66 104 372	460 368 225 114 91 140 262 236 128 93 5713 \$21,400 14,200 53,400 1,730 11;800	4, 130 3, 800 5, 000 4, 440 3, 520 4, 950 10, 300 16, 300 15, 900 18, 400 31, 800 20, 700 9, 860 20, 700 9, 860 5, 630 4, 200 3, 650	42 51 356 209 94 387 719 201 292 155 588 654 358 63 39 72 58	468 468 4,810 2,500 8,900 18,900 5,590 12,800 6,650 10,200 30,700 91,300 s38,800 3,520 1,920 882 442 345
12	1,370 1,590 1,490 1,310 1,190 1,120 1,000 893 832 2,060 2,300 1,940 1,620 1,350 1,170 1,040 916	7 8 14 24 15 10 7 4 4 4 4 4 4 4 4 15 10 10 10 10 10 10 10 10 10 10 10 10 10	18 30 60 996 553 32 21 11 10 9 9 113 19 119 89 57 36 13 8 7 7	4, 600 3, 900 3, 620 2, 650 2, 600 2, 740 3, 130 3, 240 2, 660 2, 660 3, 120 13, 500 23, 200 18, 200 8, 090 6, 170 11, 700	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66 76 104	460 368 225 114 91 140 226 128 93 \$ 713 \$ 21,400 14,200 14,200 53,400 1,660 1,730	4, 130 3, 800 5, 000 4, 440 3, 520 4, 950 10, 300 16, 300 15, 900 18, 400 31, 800 20, 700 9, 860 20, 700 9, 860 5, 630 4, 200 3, 650	42 51 350 94 387 719 201 292 155 205 358 654 358 63 72 58 39	662 468 523 4,810 2,500 893 86,030 18,900 5,590 12,800 6,650 10,200 30,700 91,300 838,800 33,520 1,920 442 345 218
12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 1	1,370 1,590 1,490 1,310 1,120 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000 1,000	7 8 14 24 15 10 7 7 4 4 4 4 6 8 20 32 2 17 13 10 4 3	18 30 60 96 53 32 21 11 10 9 11 11 199 89 57 36 13	4,600 3,900 3,620 2,650 2,600 2,740 3,130 3,240 2,660 2,660 3,120 13,500 23,800 23,200 18,200 8,090 6,170 11,700	37 35 23 16 13 19 31 27 16 13 67 540 368 226 66 104 372	460 368 225 114 91 140 262 236 128 93 5713 \$21,400 14,200 53,400 1,730 11;800	4,130 3,800 5,000 4,440 3,520 4,950 9,750 10,300 16,300 15,900 18,400 31,800 51,700 36,800 20,700 9,860 5,630 4,200	42 51 356 209 94 387 719 201 292 155 588 654 358 63 39 72 58	468 468 4,810 2,500 8,900 18,900 5,590 12,800 6,650 10,200 30,700 91,300 s38,800 3,520 1,920 882 442 345

e Estimated, s Computed by subdividing day.

a Computed from estimated concentration graph.
b Computed from partly estimated concentration graph.

### GREEN RIVER BASIN

### GREEN RIVER BASIN--Continued

### BARREN RIVER AT BOWLING GREEN, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April			May			June	
	Mean		d sediment	Mean		d sediment	Mean		l sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	2,450	21	139	1,420	31	119	655	30	53
2	2,250	21	128	1,230	21	70	588	30	48
3	2,130	18	104	1,100	22	65	534	22	32
4	2,030	18	99	976	19	50 )	490	23	30
5	1,850	21	105	862	24	56	462	22	27
6	1,790	22	106	790	25	53	466	26	33
7	2,430	35	230	720	16	31	1,610	214	s 1, 150
8	2,860	56	432	670	15	27	2,530	343	2,340
9	2,250	37 27	225	620	11	18 13	4,050	512 320	5,600 3,760
10	1,950	21	142	588	8	13	4,350	320	3, 100
11	1,810	17	83	562	13	20	5,000	209	2,820
12	1,810	16	78	562	6	9	6,680	448	8,080
13	2,280	26	160	725	13	25	4,970	230	3,090
14 15	4, 260 4, 000	85 120	978 1,300	2, 140 2, 200	86 151	s 583 897	3,020 2,240	84 69	685 417
10	4,000	120	2,500	2,200	151	00.)	2,210		211
16	2,880	53	412	2,240	247	1,490	1,800	57	277
17	2,330	31	195	2,540	680	4,700	1,470	47	186
18	2,020	24	131	2,270	215	1,320	1,230	43	143
19 20	1,780 1,580	20 18	96 77	1,590	240 98	1,030 312	1,050 934	45 45	128 113
20			''	1,180	90	212	334		113
21	1,460	17	67	1,010	55	150	850	66	151
22	1,440	19	74	1,950	133	s 799	730	30	59
23	1,670	33	s 216	4,020	308	3,340	660	25	44
24 25	6,800 7,660	928 565	17,000 11,700	2,660 1,890	206 ( 93	1,480 474	602 645	23 29	37 50
	1,000	500	11, 100	1,000	93	313	043	20	30
26	4,960	289	s4,000	1,530	64	264	886	43	103
27	3,230	78	680	1,280	50	173	976	36	95
28	2,440	52 38	342	1,040	44	124	725	26	51
29	2,010 1,680	34	206 154	897 856	42 35	102   81	575 498	21 23	33 31
30	1,000		104	750	33	67	100	23	
Total.	80,090		39,659	42,889		17,942	51,276		29,666
		July							
7	458	aura			August		<b></b> -	September	·
1		60							
		27	33	320	37	32	156	14	6
2 (	422	35	40	314	34	29	149	13	5
2 3 4	422 400 375	35 28 21	40 30 21	314 347 557		29 24 33			
2 3	422 400	35 28	40 30	314 347	34 26	29 24	149 144	13 17	5 7
2	422 400 375 340	35 28 21 16	40 30 21 15	314 347 557 502	34 26 22 22	29 24 33 30	149 144 144 142	13 17 16 14	5 7 6
2	422 400 375 340	35 28 21 16	40 30 21 15	314 347 557 502 446	34 26 22 22 19	29 24 33 30 23	149 144 144 142	13 17 16 14	5 7 6
2 3 4 5 6 7 8	422 400 375 340 320 557 710	35 28 21 16 22 28 26	40 30 21 15 19 42 50	314 347 557 502	34 26 22 22 22 19 21	29 24 33 30 23 20 17	149 144 144 142 139 132	13 17 16 14	5 7 6 5 5
2 3 4 5 6 7 8 9	422 400 375 340 320 557 710 502	35 28 21 16 22 28 26 29	40 30 21 15 19 42 50 39	314 347 557 502 446 358 324 289	34 26 22 22 19 21 19 20	29 24 33 30 23 20 17 16	149 144 144 142 139 132 126 114	13 17 16 14 13 15 17	5 7 6 5 5 6 7
2 3 4 5 6 7 8	422 400 375 340 320 557 710	35 28 21 16 22 28 26	40 30 21 15 19 42 50	314 347 557 502 446 358 324	34 26 22 22 19 21 19	29 24 33 30 23 20 17	149 144 144 142 139 132 126	13 17 16 14 13 15	5 7 6 5 5
2 3 4 5 6 7 8 9	422 400 375 340 320 557 710 502	35 28 21 16 22 28 26 29	40 30 21 15 19 42 50 39 50	314 347 557 502 446 358 324 289 317	34 26 22 22 19 21 19 20 29	29 24 33 30 23 20 17 16 25	149 144 144 142 139 132 126 114 107	13 17 16 14 13 15 17 22 11	5 7 6 5 6 7 3
2 3 5 6 7 8 9 10	422 400 375 340 320 557 710 502 430	35 28 21 16 22 28 26 29 43 72	40 30 21 15 19 42 50 39 50	314 347 557 502 446 358 324 289	34 26 22 22 19 21 19 20	29 24 33 30 23 20 17 16	149 144 144 142 139 132 126 114	13 17 16 14 13 15 17	5 7 6 5 5 6 7
2	422 400 375 340 320 557 710 502 430 372 372 372	35 28 21 16 22 28 26 29 43 72 64 38	40 300 21 15 19 42 50 39 50 72 52 28	314 347 557 552 446 358 324 289 317 602 446	34 266 22 22 22 19 21 19 20 29 42 84 80	29 24 33 30 23 20 17 16 25 68 136	149 144 144 142 139 132 126 114 107 102 95	13 17 16 14 13 15 17 22 11	5 6 5 5 6 7 3 3 2 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280	35 28 21 16 22 28 26 29 43 72 64 38 35	40 30 21 15 19 42 50 39 50 72 52 28 26	314 347 557 502 446 358 324 289 317 602 602 446 354	34 266 22 22 21 19 21 19 20 29 42 84 80 42	29 24 33 30 23 20 17 16 25 68 136 96 40	149 144 144 142 139 132 126 114 107	13 17 16 14 13 15 17 22 11 10 9	5 7 6 5 6 7 3 3 2 2 2 2
2	422 400 375 340 320 557 710 502 430 372 372 372	35 28 21 16 22 28 26 29 43 72 64 38	40 300 21 15 19 42 50 39 50 72 52 28	314 347 557 552 446 358 324 289 317 602 446	34 266 22 22 22 19 21 19 20 29 42 84 80	29 24 33 30 23 20 17 16 25 68 136	149 144 144 142 139 132 126 114 107 102 95	13 17 16 14 13 15 17 22 11	5 6 5 5 6 7 3 3 2 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280	35 28 21 16 22 28 26 29 43 72 64 38 35	40 30 21 15 19 42 50 39 50 72 28 26 18	314 347 557 502 446 358 324 289 317 602 602 446 354 307	34 26 22 22 19 21 19 20 29 42 84 80 42 32	29 24 33 30 23 20 17 16 25 68 136 96 40 26	149 144 144 142 139 132 126 114 107 102 95 89 87 83	13 17 16 14 13 15 17 22 11 10 10 9 7	5 7 6 5 6 7 3 3 2 2 2 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 283 320	35 28 21 16 22 28 26 29 43 72 64 38 35 24	40 300 21 15 19 42 50 39 50 72 22 28 26 18	314 347 557 502 446 358 324 289 317 602 602 446 354	34 266 222 22 19 21 19 20 29 42 84 80 42 32	29 24 33 30 23 20 17 16 25 68 136 96 40	149 144 144 142 139 132 126 114 107 102 95 89 87 83	13 17 16 14 13 15 17 22 11 10 9	5 7 6 5 5 6 7 3 3 2 2 2 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 283 320 327	35 28 21 16 22 28 26 29 43 72 64 38 35 24 20 26	40 300 21 15 19 42 50 39 50 72 52 28 26 18	314 347 557 502 446 358 324 289 317 602 446 354 307 271 249 230	34 266 222 22 22 29 19 20 29 29 42 80 42 32 30 25	29 24 33 30 23 20 17 16 25 68 136 96 40 26	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85	13 17 16 14 13 15 17 22 11 10 10 9 7 3	5 7 6 5 5 6 7 3 2 2 2 2 1
2	422 400 375 340 320 557 710 502 430 372 304 271 280 283 320 327 304	35 28 21 16 22 28 28 29 43 38 35 35 24 20 28 33 32 24	40 30 21 15 19 42 50 39 50 72 22 28 28 28 28 28 28 28 28	314 347 557 502 446 358 324 289 317 602 602 446 354 307 211 249 230 217	34 26 22 22 21 19 20 20 20 29 42 84 80 42 32 30 25 22 22	29 24 33 30 23 20 17 16 25 68 136 96 40 26 22 17 14	149 144 144 142 132 126 114 107 102 95 89 87 83 85 85 85	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7	5 7 6 5 5 6 7 3 3 2 2 2 2 1 1 1 1 1
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 283 320 327	35 28 21 16 22 28 26 29 43 72 64 38 35 24 20 20 33	40 300 21 15 19 42 50 39 50 72 52 28 26 18	314 347 557 502 446 358 324 289 317 602 446 354 307 271 249 230	34 266 222 22 22 29 19 20 29 29 42 80 42 32 30 25	29 24 33 30 23 20 17 16 25 68 136 96 40 26	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85	13 17 16 14 13 15 17 22 11 10 10 9 7 3	5 7 6 5 5 6 7 3 2 2 2 2 1
2	422 400 375 340 320 557 710 502 430 372 304 271 280 283 320 327 304	35 28 21 16 22 28 28 29 43 38 35 35 24 20 28 33 32 24	40 30 21 15 19 42 50 39 50 72 22 28 28 28 28 28 28 28 28	314 347 557 502 446 358 324 289 317 602 602 446 354 307 211 249 230 217	34 26 22 22 21 19 20 20 20 29 42 84 80 42 32 30 25 22 22	29 24 33 30 23 20 17 16 25 68 136 96 40 26 22 17 14	149 144 144 142 132 126 114 107 102 95 89 87 83 85 85 85	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7	5 7 6 5 5 6 6 7 3 3 2 2 2 1 1 1 1 2 2 4
2	422 400 375 340 320 557 710 502 430 372 304 221 280 280 283 320 327 304 386 403	35 36 21 16 22 28 26 43 72 64 38 35 24 20 26 33 22 25 13 15 15 15 15 15 15 15 15 16 16 16 16 16 16 16 16 16 16	40 30 21 15 19 42 50 39 50 72 22 28 26 18 15 22 22 28 18	314 347 557 502 446 358 324 289 317 602 446 354 307 271 249 230 217 206 195	34 266 222 22 22 19 20 20 29 42 84 80 42 32 30 25 22 22 22 15	29 24 33 30 23 20 17 16 25 68 136 96 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85 85 85 87 77 77	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7	5 7 6 5 5 6 7 3 3 2 2 2 1 1 1 2 4 4 4 4
2	422 400 375 340 320 557 710 502 430 372 304 281 280 280 283 320 327 304 346 403 386 403	35 28 21 16 22 28 26 29 43 72 64 35 24 20 26 33 32 22 25	40 30 21 15 19 42 50 39 39 72 52 28 8 26 18 15 22 29 18 26 15	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206	34 26 22 22 22 19 21 19 20 29 42 84 80 42 32 32 30 25 22 22 22 15	29 24 33 30 23 20 17 16 25 68 136 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 85 87 77 77	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19	5 7 6 5 5 6 6 7 3 3 2 2 2 1 1 1 1 2 4 4 4 4 4 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 283 320 327 304 386 403 392 1,050	35 28 21 16 22 28 26 29 43 35 24 20 26 33 22 25 25	40 30 30 11 15 19 42 50 39 50 72 52 28 18 15 22 29 18 26 15 16 18 21 21 21 21 21 21 21 21 21 21 21 21 21	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206	34 266 222 22 22 19 21 19 20 29 42 84 80 42 32 22 22 22 15	29 24 33 30 23 20 17 16 25 68 136 96 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85 85 85 87 77 775	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19	5 7 6 5 5 6 7 3 3 2 2 2 1 1 1 1 2 4 4 4 2 2 2
2	422 400 375 340 320 557 710 502 430 372 304 2211 280 283 320 327 304 386 403 392 1,050 810 810 810 810 810 810 810 810 810 81	35 28 21 16 22 28 26 29 43 35 24 20 26 33 22 25 25 14 15 64	40 30 21 15 19 49 49 50 39 50 72 52 28 18 15 22 29 18 26 15 16 8 18 17 28	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 174 169 203	34 26 22 22 22 19 21 19 20 29 42 84 80 42 32 32 30 25 22 22 22 15	29 24 33 30 23 20 17 16 25 68 136 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 85 87 77 77	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19	5 7 6 5 5 6 6 7 3 3 2 2 2 1 1 1 1 2 4 4 4 4 4 2
2	222 400 375 340 320 557 710 502 430 372 304 281 280 280 280 283 320 327 304 386 403 386 403 403 554 442	35 28 21 16 22 28 26 29 43 72 64 38 35 24 20 25 26 33 32 22 25 14 15 64	40 30 21 15 19 42 50 39 99 50 72 52 28 26 18 18 25 29 19 21 21 22 28 39 26 18 27 28 28 39 28 39 28 39 28 39 28 39 28 39 39 39 39 39 39 39 39 39 39 39 39 39	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 174 169 203 203	34 26 22 22 21 19 20 20 29 42 84 80 42 32 25 22 22 15	29 24 33 30 23 20 17 16 25 68 136 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 87 77 77 77 74	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19	5 7 6 5 5 6 6 7 3 3 2 2 2 1 1 1 1 2 4 4 4 2 2 2 2 2 2
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 280 280 327 304 392 403 392 1,050 810 534	35 28 21 16 22 28 26 29 43 72 64 35 24 20 26 33 22 25 64 65 66 67 71 66 60	40 30 121 15 19 49 49 50 39 50 72 52 28 28 18 125 29 18 127 a 85 85	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 185 174 169 203 203 203 203 203 203 203 203 203 203	34 26 22 22 22 21 19 20 29 42 84 80 42 32 32 25 22 22 22 15	29 24 33 30 23 20 17 16 68 136 96 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85 85 85 85 87 87 88 87 88 87 88 88 87 88 88 88 88	13 16 14 13 15 17 22 11 10 10 9 7 3 3 4 7 19 18 18 10 13 9 8 8 8 8	5 7 6 5 5 6 6 7 3 3 2 2 2 1 1 1 1 2 4 4 4 2 2 2 2 2 2 2 2
2	422 400 375 340 320 557 710 502 430 372 304 281 280 280 280 327 304 386 403 392 1,050 810 634 442 378 442 373	35 28 28 26 29 43 72 64 33 35 24 20 28 33 32 24 25 43 31 64 56 64 56 60 43	40 30 21 15 19 42 50 39 99 50 72 52 28 26 18 15 52 29 18 16 8 193 127 48 16 16 8 193 127 48 16 16 16 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 174 169 203 203 203 203 203 203 203 203 203 203	34 26 22 22 21 19 20 20 20 29 42 84 80 42 32 22 15 14 13 12 10 10	29 24 33 30 23 20 17 16 25 68 136 40 26 22 21 14 13 8	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85 85 85 79 77 75 74 74 74 83 114	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19 18 10 13 18 10 13 18 10 13 18 19 18 18 18 18 18 18 18 18 18 18 18 18 18	576 55673 32221 11124 442222 224
2	422 400 375 340 320 557 710 502 430 372 304 271 280 280 280 280 327 304 392 403 392 1,050 810 534	35 28 21 16 22 28 26 29 29 43 35 24 20 26 33 32 22 25 44 15 64 58 60 71 60 41	40 30 21 15 19 42 50 39 95 72 52 28 8 26 18 15 16 16 18 19 127 485 61 38	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 174 169 203 214 214 219 219 219 219 219 219 219 219 219 219	34 26 22 22 22 21 19 21 19 20 29 42 84 80 42 32 25 22 22 22 22 21 5 15	29 24 33 30 23 20 17 16 8 136 96 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 85 87 83 81 79 77 74 83 114 134	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 4 7 19 18 18 10 13 9 9	576 55673 32221 11124 44222 2244
2	280 280 280 280 280 280 280 280 280 280	35 28 28 26 29 43 72 64 33 35 24 20 28 33 32 24 25 43 31 64 56 64 56 60 43	40 30 21 15 19 42 50 39 99 50 72 52 28 26 18 15 52 29 18 16 8 193 127 48 16 16 8 193 127 48 16 16 16 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	314 347 557 502 446 358 324 289 317 602 602 446 354 307 271 249 230 217 206 195 185 174 169 203 203 203 203 203 203 203 203 203 203	34 26 22 22 21 19 20 20 20 29 42 84 80 42 32 22 15 14 13 12 10 10	29 24 33 30 23 20 17 16 25 68 136 40 26 22 21 14 13 8	149 144 144 142 139 132 126 114 107 102 95 89 87 83 85 85 85 85 79 77 75 74 74 74 83 114	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19 18 10 13 18 10 13 18 10 13 18 19 18 18 18 18 18 18 18 18 18 18 18 18 18	576 55673 32221 11124 442222 224
2	222 400 375 340 320 557 710 502 430 372 304 280 280 280 280 283 320 327 304 386 403 386 403 386 403 386 403 327 430 554	35 28 28 26 26 29 43 72 64 38 35 24 20 26 33 32 22 25 64 56 60 71 64 56 64 56 64 56 64 56 64 56 64 56 64 56 64 56 64 56 64 64 64 64 64 64 64 64 64 64 64 64 64	40 30 21 15 19 42 50 39 39 50 72 52 28 26 18 18 25 26 18 18 27 48 19 19 19 19 19 19 19 19 19 19 19 19 19	314 347 557 502 446 358 324 289 317 602 602 446 354 307 217 206 195 185 174 169 203 263 238 214 195 172 162	34 26 22 22 21 19 20 20 29 42 84 80 42 32 22 15 14 13 12 10 10	29 24 33 30 23 20 17 16 25 68 136 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 85 87 83 81 79 77 74 83 114 134	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 4 7 19 18 18 10 13 9 9	576 55673 32221 11124 44222 2244
2	222 400 375 340 320 557 710 502 430 281 280 280 283 320 327 304 386 403 386 403 386 403 378 380 514 514 515 516 517 517 518 518 518 518 518 518 518 518 518 518	35 28 28 28 26 29 43 72 64 35 32 25 14 15 64 56 60 61 61 61 61 61 61 61 61 61 61 61 61 61	40 30 21 15 19 42 50 39 39 39 26 18 22 29 18 26 18 27 48 5 61 39 39 49 49 49 49 49 49 49 49 49 4	314 347 557 502 446 358 324 289 317 602 446 354 307 271 249 230 217 206 195 185 174 169 203 263 238 214 195 172	34 26 22 22 21 19 20 20 29 42 84 80 42 32 22 15 14 13 12 10 10	29 24 33 30 23 20 17 16 25 68 136 40 26 22 17 14 13 8	149 144 144 142 139 132 126 114 107 102 95 87 83 85 85 85 85 87 77 77 77 77 74 83 114 134 344	13 17 16 14 13 15 17 22 11 10 10 9 7 3 3 3 4 7 19 18 18 18 10 13 9 9 8 8 8 8 12 10 10 10 10 10 10 10 10 10 10 10 10 10	576 556673 32221 11124 44222 22444 536

Total load for year (cis-days) 911, 596
Total load for year (tons) 584, 717
s Computed by subdividing day.
a Computed from estimated concentration graph.

# BARREN RIVER AT BOWLING GREEN, KY .-- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decantation: P. pipette; S. sieve; N. in native water; W. in distilled water; C. chemically dispersed; M. mechanically dispersed)

	Methods of analysis	<u> </u>	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM
		1.000																
		0.500	:	;	;	;	100	1	100	100	100	;	ł	;	;	!	1	
		0.350																
	llimeters	0.250	;	;	1	;	66	!	66	66	66	100	-	;	;	;	100	100
	Percent finer than indicated size, in millimeters	0, 125	100	100	66	;	66	901	86	86	86	66	100	9	100	;	66	88
	ndicated 8	0.062	66	66	86	100	97	66	97	97	97	86	66	66	66	100	66	8
ediment	ner than u	0, 031	86	66	97	86	96	96	96	96	96	96	86	66	97	97	98	86
Suspended sediment	Percent fü	0.016	93	88	91	8	82	8	88	88	06	88	85	98	16	85	96	93
ng	_	0, 008	75	81	75	55	65	8	48	2	74	65	78	8	78	81	90	98
		90.00	99	64	62	61	46	48	62	22	28	21	63	2	2	73	78	74
		0.002	52	20	48	47	34	36	48	39	52	38	48	48	48	22	57	25
	Concentration of suspension	analyzed (ppm)	1, 220	1,360	646	1,120	1,350	1,020	843	864	909	484	801	1,150	1.890	623	1,360	843
	Concentration	of sample (ppm)	578	866	308	534	693	678	461	461	336	257	296	631	1.240	358	920	398
Water .	tem- per-	ature (°F)																
	Discharge	(613)						17,800	16,700	16,700	11,500	19, 500	28,800	42, 100			2,470	
	Time		6:30 а. ш.	5:30 p. m.	6:30 a. m.	1:00 p. m.	6:30 a. m.	5:00 p. m.	7:20 a.m.	7:20 a.m.	5:00 p.m.	5:00 p. m.	10;30 a. m.	6:30 a.m.	8:30 a.m.	6:30 a. m.	6:30 a. m.	6:30 a.m.
í	of of collection		Dec. 7, 1954	Dec. 7	Dec. 8	Dec. 30	Feb. 7, 1955	Feb. 22	Mar. 2	Mar. 2	Mar. 7	Mar. 21	Mar. 22	Mar. 24	Apr. 24	Apr. 26	May 17	June 8

### ROUGH RIVER AT FALLS OF ROUGH, KY.

LOCATION. --At bridge on State Highway 110 at Falls of Rough, Grayson County, 150 feet upstream from gage, 50 feet upstream from Mill Dam, 1,850 feet upstream from Pleasant Run, and 3.0 miles downstream from Rock Lick Creek.

DRAINAGE AREA.--500 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1952 to September 1955.

Sediment records: October 1952 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 79°F Aug. 6; minimum, freezing point 120, 20-31 Feb. 3

Sediment records: October 1952 to September 1955.
EXTREMES, 1954-55.—Water temperatures: Maximum, 79°F Aug. 6; minimum, freezing point
Jan. 29-31, Feb. 3.
Sediment concentrations: Maximum daily, 2,460 ppm Mar. 16; minimum daily, 2 ppm on
several days during November.
Sediment loads: Maximum daily, 24,100 tons Mar. 21; minimum daily, less than 0.5 ton
on many days during November, December, and September.
EXTREMES, 1952-55.—Water temperatures: Maximum, 79°F June 17, 1954, Aug. 6, 1955;
minimum, freezing point Jan. 29-31, Feb. 3, 1955.
Sediment concentrations: Maximum daily, 2,460 ppm Mar. 16, 1955; minimum daily, 2 ppm
on several days during November 1952, January and July, 1954, and November 1955.
Sediment loads: Maximum daily, 24,100 tons Mar. 21, 1955; minimum daily, less than
0.5 ton on many days each year.
REMARKS.—Low flow regulated by small gristmill 50 feet downstream from station. Records
of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at approximately 5:30 a, m.

				Once-dan	y measur	ement at	approxim	atery 5:30	а. ш. /			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aur.	Sept.
1	66	45	45	45	35	52	45	58	61	68		69
2	67	42	42	41	35	53	49	59	61	69	78	68
3	67	41	42	43	32	52	50	60	63	70	78	68
4	67	44	40	50	33	55	51	62	63	71	77	69
5	68	43	45	52	35	55	54	64	66	71	78	68
6	69	43	44	51	36	50	58	63	66	71	79	68
7	61	40	38	44	36	42	55	64	65	73	78	67
8	61	41	35	43	36	44	51	65	65	75	77	69
ğ	61	42	38	45	39	46	52	62	63	75	74	68
10	62	45	36	42	44	52	52	63	61	75	75	70
11	65	42	34	38	36	57	48	65	59	76	76	69
12	66	43	38	39	35	54	56	64	60	75	74	65
13	68	43	43	37	34	54	62	64	59	75	73	65
	66	43	38	35	35	50	59	64	59	72	72	67
14	61	44	39	37	34	56	58	62	59	75	71	66
15	٠.	**		٠,	37	30	30	02	39		'1	80
16	58	45	39	35	39	55	58	62	60	76	72	66
17	56	47	41	35	38	50	61	61	61	76	72	67
18	55	49	38	35	38	50	63	61	63	75	72	66
19	53	50	37	35	34	47	65	61	63	75	71	66
20	52	47	36		45	49	65	62	65	74	72	66
21	57	46	36	37	42	55	65	65	66	75	72	68
22	50	47	35	37	40	49	63	66	67	75	73	69
23	50	44	37	35	39	52	65	66	68	75	73	69
24	49	45	36	34	40	48	63	66	69	76	73	70
25	51	44	33	34	40	47	59	65	65	75	72	66
26	55	42	36	34	43	48	56	65	65	76	70	67
27	55	45	39	33	48	42	55	68	64	76	72	68
	50	45	46	33	52	40	55	69	65	77	71	68
28	51	42	47	32	32	39	57	68	65	76	73	67
29	47	40	45	32		40	59	65	67	77	74	69
30	47	10	44	32		42	39	61		78	70	
31		ļ	77	32		42		01		78	70	<u> </u>
Aver-	58.	44	39	39	38	49.	57	66	63	74	74	68
age		L	L	L			L				L	

### ROUGH RIVER AT FALLS OF ROUGH, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955

				<u> </u>					
		October		ll	November	١	it	December	•
		Suspende	sediment		Suspende	d sediment		Suspende	d sediment
	Mean			Mean			Mean		
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	M ean	Tons
-	charge	concen-		charge	concen-		charge	corcen-	
		tration	per		tration	per		tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(mcqq)	day
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6	31	19	2	21	21	1	235	16	10
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26	19	38	2	20	2		56	11	2
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30	20	32	2	20	•	1	1,790		
31		32	Z				1,790	2,52	s1,300
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Total.	2.393		1.705	616		20	1 12.235		13.520
Total.	2,393		1,705	616		20	12, 235		13,526
Total.	2,393		1,705	616		20	12,235		13,526
		January			February			Ma~ch	
1	672	January 76	138	129		1	6,490	Ma~ch	8,950
1	672 540	January 76 44	138 64	129 326	February		6,490 5,880	Ma~ch	8,950 3,970
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1 2 3 4 5	672 540 429 338 297	January  76 44 35 25 20 18	138 64 40 23 16	129 326 434 364 1,520	February  4 4 39 19 227	1 4 46 19 s1,780	6,490 5,880 4,270 2,000 1,990	Ma*ch 5'1 250 140 70 432	8,950 3,970 1,610 378 s2,770
1 2 4 5 6	672 540 429 338 297 320 350	January  76 44 35 25 20 18 17	138 64 40 23 16	129 326 434 364 1,520 4,480 5,850	February  4 4 39 19 227 784 682	1 4 46 19 s1,780	6,490 5,880 4,270 2,000 1,990	Ma-ch 5'1 250 140 70 432	8,950 3,970 1,610 378 s2,770
1 2 3 4 5	672 540 429 338 297	January  76 44 35 25 20 18	138 64 40 23 16	129 326 434 364 1,520 4,480 5,850	February  4 4 39 19 227 784 682	1 4 46 19 s1,780 9,480 10,800	6,490 5,880 4,270 2,000 1,990 2,560 1,990	Ma*ch 5'1 250 140 70 432	8,950 3,970 1,610 378 s2,770 6,190 s3,710
1 2 3 5 6 8	672 540 429 338 297 320 350 308	January  76 44 35 25 20 18 17 12	138 64 40 23 16 16	129 326 434 364 1,520 4,480 5,850 6,420	February  4 4 39 19 227 784 682 233	1 4 46 19 \$1,780 9,480 10,800 4,040	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931	Ma-ch 5'1 25'0 140 70 432 895 628 144	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362
1	672 540 429 338 297 320 350 308 268	January  76 44 35 25 20 18 17 12 8	138 64 40 23 16 16 16 10 6	129 326 434 364 1,520 4,480 5,850 6,420 5,480	February  4 4 39 19 227 784 682 233 78	1 4 46 19 s1,780 9,480 10,800 4,040 1,150	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754	Ma-ch 511 250 140 70 432 895 628 144 54	8,950 3,970 1,610 378 82,770 6,190 83,710 362 110
1 2 3 5 6 8	672 540 429 338 297 320 350 308	January  76 44 35 25 20 18 17 12	138 64 40 23 16 16	129 326 434 364 1,520 4,480 5,850 6,420	February  4 4 39 19 227 784 682 233	1 4 46 19 \$1,780 9,480 10,800 4,040	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931	Ma-ch 5'1 25'0 140 70 432 895 628 144	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362
1	672 540 429 338 297 320 350 308 268 252	January  76 44 35 25 20 18 17 12 8 7	138 64 40 23 16 16 10 6	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830	February  4 4 39 19 227 784 682 233 78 33	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630	Ma-ch 511 250 140 70 432 895 628 144 54 34	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58
1	672 540 429 338 297 320 350 308 268 252	January  76 44 435 25 20 18 17 12 8 7	138 64 40 23 16 16 16 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830	February  4 4 39 19 227 784 682 233 78 33	1 4 46 19 \$1,780 9,480 10,800 4,040 1,150 252	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630	Ma-ch 511 250 140 70 432 895 628 144 54 34	8,950 3,970 1,610 378 s 2,770 6,190 s 3,710 362 110 58
1	672 540 429 338 297 320 350 308 268 252 254 297	January  76 44 35 25 20 18 17 12 8 7	138 64 40 23 16 16 16 10 6 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830	February  4 4 39 19 227 784 682 233 78 33	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630	Ma-ch 511 250 140 70 432 895 628 144 54 34	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58
1	672 540 429 338 297 320 350 308 268 252	January  76 44 435 25 20 18 17 12 8 7	138 64 40 23 16 16 16 10 6 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090	February  4 4 39 19 227 784 682 233 78 33 34	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630	Ma-ch 511 250 140 70 432 895 628 144 54 34 28	8,950 3,970 1,610 3,78 s2,770 6,190 s3,710 362 110 58 41
1	672 540 429 338 297 320 350 308 268 252 254 297 386	January  76 44 35 25 20 18 17 12 8 7	138 64 40 23 16 16 10 6 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511	February  4 4 39 19 227 784 682 233 78 33 34 38 22	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 22	8,950 3,970 1,610 378 52,770 6,190 53,710 58 41 29 25
1	672 540 429 338 297 320 350 308 268 252 254 297 386 373	January  76 44 35 25 20 18 17 12 8 7	138 64 40 23 16 16 16 10 6 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418	Ma-ch 5'1 250 140 70 432 895 6928 144 54 34 28 22 22 27	8,950 3,970 1,610 378 s 2,770 6,190 s 3,710 362 110 58 41 29 25 27
1	672 540 429 338 297 320 350 308 268 252 254 297 386	January  76 44 35 25 20 18 17 12 8 7	138 64 40 23 16 16 10 6 5	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511	February  4 4 39 19 227 784 682 233 78 33 34 38 22	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 22	8,950 3,970 1,610 378 52,770 6,190 53,710 58 41 29 25
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1	672 540 429 338 297 320 350 308 268 252 254 297 386 373 326	76 44 35 20 18 17 12 8 7 4 4 4 4 3 3 5 5	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764	February  4 4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 418 368 1,030 2,780 3,300 2,630 2,630	Ma-ch 5'1 250 140 70 432 895 628 144 54 28 22 27 388 2,4€0 1,8€0	8,950 3,970 1,610 378 s 2,770 6,190 s 3,710 58 41 29 25 27 s 1,600
1	672 540 429 338 297 320 350 308 268 252 254 386 373 326 350 334 290	January  76 44 35 25 20 18 17 12 8 7 5 4 4 4 3 7 7 7	138 640 23 16 16 16 10 5 3 3 4 4 4 4 3	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 425 572 764 657	February  4 4 39 19 227 764 682 223 78 33 34 38 22 110 10 44 33	1 46 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 418 368 1,030 2,780 3,300 2,630 2,630	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 22 27 388 2,400 1,860 400	8,950 3,970 1,610 378 52,770 6,190 53,710 362 110 58 41 29 25 27 81,600 16,600 3,480
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1	672 540 429 338 297 320 350 308 268 252 254 386 373 326 350 334 290	January  76 44 35 25 20 18 17 12 8 7 5 4 4 4 3 7 7 7	138 640 23 16 16 16 10 5 3 3 4 4 4 4 3	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 425 572 764 657	February  4 4 39 19 227 764 682 223 78 33 34 38 22 110 10 44 33	1 46 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 418 368 1,030 2,780 3,300 2,630 2,630	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 22 27 388 2,400 1,860 400	8,950 3,970 1,610 378 52,770 6,190 53,710 362 110 58 41 29 25 27 81,600 16,600 3,480
1	672 540 429 338 297 320 350 350 368 252 254 297 386 373 326 350 334 292 344 294 344 214	January  76 44 355 25 20 18 17 12 8 7 5 4 4 4 5 7 7 5 4	138 64 40 23 16 16 10 5 5 3 3 4 4 4 3 5 6	129 326 434 364 1,520 4,480 5,850 6,420 703 511 430 425 572 764 657 513 612	February  4 4 4 39 19 227 784 682 223 78 33 34 38 22 21 10 44 33 25 36	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 450 170 257	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 29 25 1,700 18,500 16,600 3,480 552 s1,700
1	672 540 429 338 297 320 350 350 368 268 252 254 297 386 373 326 350 373 326 324 294 294 294 294 294 294 294 294 294 2	76 44 44 35 25 20 18 18 17 12 8 7 7 7 7 7 7 7 5 4	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3 5 6	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 425 572 764 657 513 612	February  4 4 39 19 227 704 682 233 78 33 34 38 222 110 10 44 33 25 36 620	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6.210	6,490 5,880 4,270 2,000 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,610 5,190	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,40 1,860 450 1,760	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58 41 29 25 27 s1,600 18,500 16,600 3,480 532 s1,700
1	672 540 429 338 297 320 350 308 268 252 254 297 386 373 326 350 348 214 226 430	January  76 44 355 25 20 18 18 17 12 8 7 5 4 4 4 4 5 5 7 7 5 4 13	138 64 40 23 16 16 10 5 5 3 3 4 4 4 3 5 6	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 425 572 764 657 513 612	February  4 4 4 39 19 227 784 682 223 78 33 34 38 22 21 10 44 33 25 36	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6.210	6,490 5,880 4,270 2,000 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,610 5,190	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,40 1,860 450 1,760	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 25 27 s1,600 16,600 3,480 532 s1,700 s24,100 11,400
1	672 540 429 338 297 320 350 350 368 268 252 254 297 386 373 326 350 373 326 324 294 294 294 294 294 294 294 294 294 2	January  76 44 355 25 20 18 18 17 12 8 7 5 4 4 4 4 5 5 7 7 5 4 13	138 640 23 16 16 16 10 5 3 3 4 4 4 4 3 5 6 6 5 3 3	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 425 572 764 657 513 612 3, 710 5, 760	February  4 4 4 39 19 227 784 682 223 78 33 34 38 22 21 10 0 44 33 25 36 620 650	1 46 19 \$1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6,210 9,190	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610	Ma-ch 5'1 2'0 140 70 432 895 628 144 34 28 22 27 388 2,400 1,800 400 170 257	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 25 27 s1,600 16,600 3,480 532 s1,700 s24,100 11,400
1	672 540 429 338 297 320 350 350 368 268 252 254 297 373 326 373 324 290 334 291 478	January  76 44 45 25 20 18 17 12 8 7 5 4 4 4 5 5 13 25 5 13 25	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3 5 6 5 5 2 2	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 5,760 6,710	February  4 4 4 39 19 227 784 682 223 78 833 34 38 22 21 10 10 44 33 55 36 620 591 497	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11  s32 91 58 35 s101 6,210 9,180 9,000	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,890	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 470 170 257	8, 950 3, 970 1, 610 378 s 2, 770 6, 190 s 3, 710 58 41 29 25 27 s 1, 600 18, 500 16, 600 3, 480 5, 680 s 24, 100 11, 400 5, 680
1	672 540 429 338 297 320 350 308 268 252 254 297 386 373 326 350 348 214 226 430 478 379	January  76 44 35 25 20 188 17 12 8 7 7 5 4 4 4 3 3 5 7 7 5 4 5 13 22 5 33	138 640 23 16 16 16 10 5 3 3 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 572 764 657 513 612 3, 710 5, 760 6, 710 6, 390	February  4 4 39 19 227 784 682 233 78 33 34 38 22 211 10 44 33 25 36 620 591 497 201	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 s32 91 58 35 s101 6,210 9,190 9,000 3,470	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 418 368 3,300 2,780 3,300 2,630 1,160 1,610 5,820 6,820 6,890 5,660	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 22 27 388 2,460 1,860 450 177 1,760 620 308	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58 41 29 25 s1,600 18,500 16,600 3,480 532 s1,700 s24,100 51,760
1	672 540 429 338 297 320 350 350 368 268 252 254 297 373 326 373 324 290 334 291 478	January  76 44 45 25 20 18 17 12 8 7 5 4 4 4 5 5 13 25 5 13 25	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3 5 6 5 5 2 2	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 5,760 6,710	February  4 4 4 39 19 227 784 682 223 78 833 34 38 22 21 10 10 44 33 55 36 620 591 497	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11  s32 91 58 35 s101 6,210 9,180 9,000	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,890	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 470 170 257	8, 950 3, 970 1, 610 378 s 2, 770 6, 190 s 3, 710 58 41 29 25 27 s 1, 600 18, 500 16, 600 3, 480 5, 680 s 24, 100 11, 400 5, 680
1	672 540 429 338 297 320 350 308 252 254 297 386 373 326 350 348 214 226 430 478 379 290	January  76 44 35 25 20 18 18 17 12 8 7 7 5 4 4 4 3 3 5 7 7 7 5 4 5 13 25 33 26	138 640 23 16 16 16 10 6 5 3 3 4 4 4 4 3 3 15 5 6 5 5 3 3 2 2 2 3 4 4 4 3 3 4 4 4 4 4 4 4 4 4	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 425 572 764 657 513 612 3, 710 6, 710 6, 390 4, 380	February  4 4 39 19 227 704 682 233 78 33 34 38 22 21 10 10 44 33 25 59 497 201 62	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 24 11 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733	6,490 5,880 4,270 2,000 1,990 931 754 630 544 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,40 1,860 40 1,760 620 30** 115 72	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58 41 29 25 27 s1,600 18,500 18,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547
1	672 540 429 338 297 320 350 350 350 350 350 350 352 252 254 297 386 373 326 350 334 290 248 214 248 248 214 228 248 248 248 248 248 259 248 248 259 248 259 268 268 279 279 279 279 279 279 279 279 279 279	January  76 44 45 25 20 18 17 12 8 7 5 4 4 4 5 5 7 7 7 5 4 5 13 33 26 33 26 18	138 64 40 23 16 16 10 5 5 3 3 4 4 4 3 3 15 6 6 5 3 2 2 3 1 5 6 6 1 1 5 1 6 1 6 1 7 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 6,710 6,390 4,380 2,100	February  4 4 4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 591 497 201 62 68	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 111 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733 385	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 450 170 257 1,760 620 368 115 72	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58 41 29 25 s1,600 18,500 16,600 3,480 532 s1,700 s24,100 51,760
1	672 540 429 338 297 320 350 308 268 252 254 386 373 326 350 34 290 248 214 226 430 478 290 238 290 290 200 200 200 200 200 200 200 200	January  76 44 35 25 20 18 18 17 12 8 7 7 5 4 4 4 3 3 5 7 7 7 5 4 5 13 25 33 26	138 640 23 16 16 16 10 6 5 3 3 4 4 4 4 3 3 15 5 6 5 5 3 3 2 2 2 3 4 4 4 3 3 4 4 4 4 4 4 4 4 4	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 6,710 6,390 4,380 2,100	February  4 4 39 19 227 704 682 233 78 33 34 38 22 21 10 10 44 33 25 59 497 201 62	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 111 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733 385	6,490 5,880 4,270 2,000 1,990 931 754 630 544 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820 6,820	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,40 1,860 40 1,760 620 30** 115 72	8,950 3,970 1,610 378 s2,770 6,190 s3,710 362 110 58 41 29 25 27 s1,600 18,500 18,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547
1	672 540 429 338 297 320 350 308 268 252 254 386 373 326 350 34 290 248 214 226 430 478 290 238 290 290 200 200 200 200 200 200 200 200	January  76 44 35 25 20 18 18 17 12 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 13 26 18 18 18	138 640 23 16 16 16 10 6 5 3 3 4 4 4 4 3 3 15 3 3 2 2 3 15 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 425 572 764 657 513 612 3, 710 6, 710 6, 710 6, 390 4, 380 2, 100 4, 260	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 591 497 201 62 68 918	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6,210 9,190 9,000 3,470 733 385 \$11,200	6,490 5,880 4,270 2,000 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,40 1,860 460 1,760 620 306 115 72	8, 950 3, 970 1, 610 378 s 2, 770 6, 190 s 3, 710 58 41 29 25 27 s 1, 600 18, 500 18, 500 11, 400 5, 690 11, 400 5, 690 11, 400 5, 690 11, 760 s 547 421 136
1	672 540 429 338 297 320 350 350 350 268 252 254 297 386 373 326 350 344 290 248 214 226 430 478 379 290 238 203 238 238 238 239 238 248 259 259 259 259 259 259 259 259 259 259	January  76 44 355 25 20 18 17 12 8 7 5 4 4 4 4 5 5 7 7 7 5 4 5 13 25 33 26 18 12 7	138 640 23 16 16 16 10 5 5 3 3 4 4 4 3 3 15 5 6 5 5 3 2 2 3 2 3 1 6 6 6 5 5 7 8 7 8 8 7 8 7 8 8 7 8 8 8 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 572 764 657 513 612 3, 710 6, 710 6, 390 4, 380 2, 100 4, 260 5, 940	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 0 44 33 25 36 620 6591 497 201 62 68 918 986	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733 385 s11,200 15,500	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950 1,200 811 624	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 450 170 257 1,760 620 30** 115 72 130 62 47	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 29 25 27 s1,600 18,500 16,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547 421 136 79
1	672 540 429 338 297 320 350 350 368 268 252 254 297 373 326 373 324 248 214 226 430 478 379 290 238 203 171 140	January  76 44 35 25 20 18 18 7 12 8 7 5 4 4 4 3 3 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3 3 15 6 6 5 5 2 2 3 1 4 4 4 4 4 4 5 5 5 6 6 7 7 8 7 8 7 8 7 8 7 8 8 7 8 7 8 8 7 8 7 8 8 8 8 7 8 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 6,710 6,710 6,710 6,390 4,380 2,100 4,260 5,940 5,940 5,940	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 591 497 201 62 68 918	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6,210 9,190 9,000 3,470 733 385 \$11,200	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,780 3,300 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950 1,200 811 624 544	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 470 170 257 1,760 620 306 115 72 150 62 47 34	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 29 25 27 s1,600 18,500 16,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547 421 136 79 50
1	672 540 429 338 297 320 350 308 268 252 254 297 386 373 326 350 348 214 226 430 478 379 290 238 238 238 211 111 121	January  76 44 355 25 20 18 17 12 8 7 5 4 4 4 3 3 3 3 26 18 12 7 8 8	138 640 23 16 16 16 10 6 5 3 3 4 4 4 4 3 3 2 2 3 15 3 2 2 3 2 3 3 3 3 4 4 3 3 3 3 4 4 3 3 3 4 4 3 3 4 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 3 4 3 4 3 4 3 4 3 4 3 3 4 3 3 4 3 4 3 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	129 326 434 364 1, 520 4, 480 5, 850 6, 420 5, 480 2, 830 1, 090 703 511 430 572 764 657 513 612 3, 710 6, 710 6, 390 4, 380 2, 100 4, 260 5, 940	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 6591 497 201 62 68 918 986	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733 385 s11,200 15,500	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 482 482 483 368 3,000 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950 1,200 811 624 544 481	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 450 170 227 1,760 620 304 122 130 62 47 34 24	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 29 25 27 s1,600 16,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547 421 136 79 50 31
1	672 540 429 338 297 320 350 350 368 268 252 254 297 373 326 373 324 248 214 226 430 478 379 290 238 203 171 140	January  76 44 35 25 20 18 18 7 12 8 7 5 4 4 4 3 3 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	138 64 40 23 16 16 10 6 5 3 3 4 4 4 3 3 15 6 6 5 5 2 2 3 1 4 4 4 4 4 4 5 5 5 6 6 7 7 8 7 8 7 8 7 8 7 8 8 7 8 7 8 8 7 8 7 8 8 8 8 7 8 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 3,710 6,710 6,710 6,390 4,260 5,940	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 6591 497 201 62 68 918 986	1 4 46 19 s1,780 10,800 4,040 1,150 252 100 72 30 24 11 \$32 91 58 35 \$101 6,210 9,190 9,000 3,470 733 385 \$11,200 15,500	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 630 544 482 418 368 1,030 2,630 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950 1,200 811 624 481 481 481	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 470 170 257 1,760 620 306 115 72 150 62 47 34	8,950 3,970 1,610 378 52,770 6,190 53,710 58 41 29 25 51,600 18,500 16,600 3,480 552 s1,700 s24,100 11,760 s547 421 136 79 50 31 23
1	672 540 429 338 297 320 350 308 268 252 254 297 386 373 326 350 348 214 226 430 478 379 290 238 238 238 211 111 121	January  76 44 355 25 20 18 17 12 8 7 5 4 4 4 3 3 3 3 26 18 12 7 8 8	138 640 23 16 16 16 10 6 5 3 3 4 4 4 4 3 3 2 2 3 15 3 2 2 3 2 3 3 3 3 4 4 3 3 3 3 4 4 3 3 3 4 4 3 3 4 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3 3 4 3 4 3 4 3 4 3 4 3 3 4 3 3 4 3 4 3 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	129 326 434 364 1,520 4,480 5,850 6,420 5,480 2,830 1,090 703 511 430 425 572 764 657 513 612 3,710 6,710 6,710 6,710 6,390 4,380 2,100 4,260 5,940 5,940 5,940	February  4 4 39 19 227 784 682 233 78 33 34 38 22 21 10 10 44 33 25 36 620 6591 497 201 62 68 918 986	1 4 46 19 s1,780 9,480 10,800 4,040 1,150 252 100 72 30 24 11 s32 91 58 35 s101 6,210 9,190 9,000 3,470 733 385 s11,200 15,500	6,490 5,880 4,270 2,000 1,990 2,560 1,990 931 754 482 482 483 368 3,000 2,630 1,160 1,610 5,190 6,820 6,890 5,660 2,950 1,200 811 624 544 481	Ma-ch 5'1 250 140 70 432 895 628 144 54 34 28 22 27 388 2,460 1,860 450 170 227 1,760 620 304 122 130 62 47 34 24	8,950 3,970 1,610 378 s2,770 6,190 s3,710 58 41 29 25 27 s1,600 16,600 3,480 532 s1,700 s24,100 11,400 5,690 1,760 s547 421 136 79 50 31

e Estimated. s Computed by subdividing day. t Less than 0.5 ton.

### GREEN RIVER BASIN

### GREEN RIVER BASIN--Continued

### ROUGH RIVER AT FALLS OF ROUGH, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued April May II

		April			Мау			June	
	Mean		d sediment	Mean		d sediment	Mean	Suspende	d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	385	18	19	265	18	13	214	97	56
2	357	21	20	228	18	11	156	72	30
3 4	334 313	17 16	15 14	204 182	22 18	12 9	136 115	47 35	1 <b>7</b> 11
5,	289	15	12	164	20	9	95	30	8
						_ ]			_
7	442 399	29 148	35 159	146 134	20 18	8 6	98 278	28 31	7 23
8	333	33	30	127	20	7	875	217	s 922
9 }	277	34	25	113	16	5	1,710	1,120	5,170
10	250	44	30	105	13	4	1,020	471	1,300
11	442	125	s 233	99	13	3	1,260	245	833
12	645	217	s 399	113	14	4	1,170	168	531
13 14	1,600 1,060	433 307	s 2, 090 s 936	927 1,510	422 1,410	s 2, 380 5, 750	858 590	98 61	227 97
15	689	52	97	865	298	s 776	415	42	47
16	505	28	38	E00	70			37	
16	406	19	21	520 365	72 62	101 61	310 242	32	31 21
18	346	13	12	279	42	32	198	34	18
19	302	11	9	222	31	18	166	33	15
20	261	12	8	180	32	16	144	33	13
21	261	8	6	345	215	s 278	122	28	9
23	304 521	10 52	8 s 94	2,160 1,700	948 600	s 6, 150 s 2, 950	114 96	25 23	8 6
24	1,110	250	s 820	691	180	s 351	731	311	s1,340
25	1,280	172	594	470	65	82	1,560	1,620	6,820
26	828	135	302	368	50	50	1,250	1,460	4,930
27	594	66	106	282	40	30	505	560	s 799
28	455	40	49	744	420	s1,890	246	238	158
29 30	369 309	29 22	29 18	1,000 512	861 368	s 2, 550 s 538	176 135	151 109	72 40
31	/			308	116	96	133		
Total.	15,666		6,228	15,328		24, 190	14,985		23,559
===		July			August			September	
				1			ì		
1	110		22	64		8	20		1
2	110 93	75 48	22 12	64 41	48 62	8 7	20 21	16 20	1 1
2 3	93 77	75 48 34	12 7	41 38	48 62 38	7 4	21 21	16 20 22	1 1
2	93 77 81	75 48	12 7 6	41 38 92	48 62 38 28	7 4 7	21 21 20	16 20 22 29	1 1 2
2	93 77 81 96	75 48 34 26	12 7 6 9	41 38 92 135	48 62 38 28 26	7 4 7 9	21 21 20 20	16 20 22 29 28	1 1 2 2
2	93 77 81 96	75 48 34 26 36	12 7 6 9 e 130	41 38 92 135	48 62 38 28 26	7 4 7 9	21 21 20 20	16 20 22 29 28	1 1 2 2 2
2	93 77 81 96	75 48 34 26	12 7 6 9	41 38 92 135	48 62 38 28 26 26	7 4 7 9 7 s 10	21 21 20 20 20 20	16 20 22 29 28 28	1 1 2 2 2 2
2	93 77 81 96 232 250 167 123	75 48 34 26 36 36	12 7 6 9 e130 126 40 30	41 38 92 135 101 110 468 268	48 62 38 28 26 26 31 227 359	7 4 7 9 7 5 10 5 256 260	21 21 20 20 20 23 21 15	16 20 22 29 28 28 25 24 25	1 1 2 2 2 2 1 1
2	93 77 81 96 232 250 167	75 48 34 26 36	12 7 6 9 e 130 126 40	41 38 92 135 101 110 468	48 62 38 28 26 26 31 227	7 4 7 9 7 s 10 s 256	21 21 20 20 20 20 23 21	16 20 22 29 28 28 25 24	1 1 2 2 2 2 2
2	93 77 81 96 232 250 167 123 108	75 48 34 26 36 36  186 90 89 72	12 7 6 9 e130 126 40 30 21	41 38 92 135 101 110 468 268 127	48 62 38 28 26 26 31 227 359 189	7 4 7 9 7 s 10 s 256 260 65	21 20 20 20 20 20 23 21 15 15	18 20 22 29 28 28 25 24 25 17	1 1 2 2 2 2 1 1
23. 45. 6	93 77 81 96 232 250 167 123 108	75 48 34 26 36 36 90 89 72	12 7 6 9 e130 126 40 30 21	41 38 92 135 101 110 468 268 127	48 62 38 28 26 26 31 227 359 189	7 4 7 9 7 \$ 10 \$ 256 260 65	21 21 20 20 20 23 21 15 15	16 20 22 29 28 28 25 24 25 17	1 1 2 2 2 2 1 1 1
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23.4.566	93 77 81 96 232 250 167 123 108 136 137 90 76 74	75 48 34 26 36  186 90 89 72 38 56 42 42 43	12 7 6 9 e130 126 40 30 21 14 21 10 9	41 38 92 135 101 110 468 268 127 88 83 166 108 83	48 62 38 28 26 26 31 227 359 189 84 92 78 60 59	7 4 7 9 7 5 10 8 256 260 65 20 21 35 17 13	21 20 20 20 20 23 21 15 15 16 22 15 20 15	16 20 22 29 28 28 25 24 25 17 17 19 28 25 37	1 1 2 2 2 2 1 1 1 1 1 1
2	93 77 81 96 232 250 167 123 108 136 137 90 76 74	75 48 34 426 36 	12 7 6 9 e130 126 40 30 21 14 21 10 9 8	41 38 92 135 101 110 468 268 127 88 83 166 108 83	48 62 38 28 26 31 227 359 84 92 78 60 59	7 4 4 7 9 9 7 5 10 5 256 260 65 20 21 35 17 13 15 24 11	21 21 20 20 20 23 21 15 15 16 22 15 20 15	16 20 22 29 28 28 25 24 25 27 17 17 19 28 25 37	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1
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2	97 81 96 232 250 167 123 108 136 137 75 239 396 189	75 48 34 26 36 	12 7 6 9 e130 126 40 30 21 14 21 10 9 8	41 38 92 135 101 110 468 268 127 88 83 166 108 83	48 62 38 28 26 31 227 359 84 92 78 60 59	7 4 7 9 7 5 10 8 256 260 260 21 35 17 13 15 24 11 8 6	21 21 20 20 20 23 21 15 15 16 22 15 20 15	16 20 22 29 28 28 25 24 25 27 17 17 19 28 25 37	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1
2	93 93 96 232 250 167 128 136 137 90 76 74 63 75 239 396 189	75 48 34 426 36 	12 7 6 9 e1300 126 40 30 0 21 1 14 21 10 9 8 6 6 7 1 s \$60 \$784 \$326 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$ \$46 \$\$\$ \$46 \$\$\$ \$46 \$\$\$ \$46 \$\$\$ \$46 \$\$\$ \$46 \$\$\$ \$46 \$\$\$	41 38 92 135 101 110 468 268 268 127 88 83 166 108 83 177 66 54	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 54 3	7 4 4 7 9 9 7 5 10 5 256 260 65 20 21 35 17 13 15 24 11 8 6 6	21 21 20 20 23 21 15 15 16 22 15 20 15 15 20 15	16 20 22 29 28 28 25 24 25 27 17 17 19 28 25 37 32 32 32 38 27 14	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 2 2
2	93 77 81 96 232 250 167 123 108 136 137 75 239 396 189 79 72	75 48 34 26 36 36 188 90 72 38 56 42 42 43 33 54 488	12 7 7 6 9 9 9 120 120 120 120 120 121 14 21 10 9 8 6 7 18 5326 546 666 666	41 38 92 135 101 110 468 268 127 88 83 166 108 83 91 177 66 54 50	48 62 38 28 26 26 31 227 359 189 84 92 78 60 59 61 51 62 43	7 4 7 9 9 7 5 10 8 256 260 65 20 21 35 17 13 15 24 11 8 6 6 4	21 21 20 20 20 23 23 21 15 15 15 22 15 20 15 15 22 15 15	16 20 22 29 28 25 24 25 17 17 19 28 25 37 32 32 32 38 27 14	1 1 2 2 2 3 1 1 1 1 1 1 1 1 2 2 1
2	937 81 96 232 250 167 123 108 136 137 74 63 75 239 396 189 72 87	75 48 34 26 36 36 90 72 38 56 42 42 43 33 54 46 33 183 123	12 7 6 9 9 e130 125 40 30 125 1 10 9 8 6 7 8 4 6 8 326 6 43 \$ 116	41 38 92 135 101 110 468 268 127 88 83 166 108 83 91 177 66 54 50 45 47 32 32	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 54 3	7 4 7 9 7 8 10 8 256 260 65 21 35 17 13 15 24 11 8 6 4 2 2	21 21 20 20 23 21 15 15 16 22 15 20 15 15 20 15	16 20 22 29 28 28 25 24 25 27 17 17 19 28 25 37 32 32 32 38 27 14	1 1 2 2 2 2 1 1 1 1 1 1 1 1 1 1 2 2
2	93 81 96 232 250 167 128 108 136 137 90 76 74 63 75 239 396 189	75 48 34 426 36 	12 7 6 9 e 130 126 40 30 121 114 21 10 10 9 8 6 7 78 46 66 43 326	41 38 92 135 101 110 468 268 127 88 83 166 108 83 91 177 66 54 50 45 47	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 56 43	7 4 4 7 9 9 7 5 10 5 256 260 25 17 13 15 24 11 8 6 4 4 2 2	21 21 20 20 20 23 21 15 15 16 22 15 20 15 14 15 15 11 15 11 15 11 15 11 15 11 15 11 15 11 15 11 15 11 15 11 15 11 15 15	16 20 22 29 28 25 24 25 24 27 17 19 28 25 37 32 32 38 27 14	1 1 2 2 2 2 1 1 1 1 1 1 1 2 2 1 1 1 1 1
2 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	93 93 96 232 250 167 128 136 137 90 76 74 63 75 239 396 189 79 72 280 206	75 48 34 426 36 	12 7 7 6 9 9 e130 125 40 30 125 110 9 8 6 7 7 \$ 560 \$ 784 \$ 8326 \$ 66 43 \$ 8116 \$ 8195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195 \$ 1195	411 38 92 135 101 110 468 268 268 127 88 83 166 108 83 191 177 66 54 50 45 47 32 32 32	48 62 38 28 26 311 227 359 189 84 92 78 60 59 61 51 52 56 43 55 28 28 22	7 4 4 7 9 9 7 5 10 8 256 260 85 85 17 13 15 24 11 8 6 6 4 2 2 2	21 21 20 20 23 21 15 15 16 22 15 20 15 14 15 12 15 15 14 15 11 15 15 11 15 11 15 11 15 15 15 15	16 20 22 29 28 25 24 25 27 17 17 19 28 25 37 32 32 38 27 14 14 17 16 12 13	1 1 2 2 2 3 1 1 1 1 1 1 1 1 2 2 1 1 1 1
2 3 4 4 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	93 81 96 232 250 167 128 108 136 137 90 76 74 63 75 239 396 189 79 72 287 280 206	75 48 34 426 36 	12 7 6 9 e 1300 126 40 30 1 21 11 10 9 8 6 6 7 \$ 560 \$ \$ 46 66 43 \$ \$ \$ 116 \$ \$ 195 \$ \$ 54 \$ \$ 54 \$ \$ \$ 54 \$ \$ \$ \$ 54 \$ \$ \$ \$	411 38 92 135 101 1468 268 127 88 83 166 108 83 177 66 54 45 47 32 32 32 32	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 56 43 51 35 22 22 22 22 22 22 22 22 22 22 22 22 22	7 4 4 7 9 9 7 5 10 5 256 260 65 65 17 13 15 24 11 8 6 6 4 2 2 2 2 2 2 2	21 21 20 20 23 21 15 15 16 22 15 15 14 15 15 15 11 15 15 11 15 15 11 15 15 11 15 15	16 20 22 29 28 25 24 25 24 25 17 17 19 28 25 37 32 32 32 38 27 14 14 17 16 12 13	1 1 2 2 2 2 1 1 1 1 1 1 1 1 2 2 1 1 1 1
2	93 81 96 232 250 167 123 108 136 137 75 239 189 79 72 206 91 67 53	75 48 34 26 36 36 188 90 72 38 56 42 42 43 38 33 54 488 33 35 42 42 42 43 488 488 488 183 183 183 183 183 183 184 221	12 7 7 6 9 9 e130 30 0 126 40 321 14 21 10 9 8 6 7 8 584 8 326 8 46 66 43 \$116 \$195 54 30 10 10	41 38 92 135 101 110 468 268 127 88 83 166 108 83 91 177 66 54 50 45 47 32 32 32 32 32 32 25	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 56 43 51 22 78 27 27 27 28 27 28 27 28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	7 4 7 9 9 7 5 10 s 256 260 65 20 21 35 17 13 15 24 11 8 6 6 4 2 2 2 2 1	21 20 20 20 23 21 15 15 16 22 15 20 15 15 20 15 15 15 15 15 15 15 15 15 15 15 15 15	16 20 22 29 28 25 24 25 17 17 19 28 25 37 32 32 32 31 14 14 14 15 12 13	1 1 2 2 2 3 1 1 1 1 1 1 1 1 2 2 1 1 1 1
2 3 4 4 5 5 6 9 10 10 11 12 13 11 14 15 17 18 19 20 21 22 23 24 25 26 27 28 29 29 29 29	93 81 96 232 250 167 126 137 90 90 76 74 63 75 239 396 189 79 72 280 206 91 67 53 53	75 48 34 44 26 36 186 90 89 72 38 56 42 42 43 38 54 784 488 176 338 133 324 221 164 70	12 7 6 9 e 1300 126 40 30 1 21 11 10 9 8 6 6 7 \$ 560 \$ \$ 46 66 43 \$ \$ \$ 116 \$ \$ 195 \$ \$ 54 \$ \$ 54 \$ \$ \$ 54 \$ \$ \$ \$ 54 \$ \$ \$ \$	411 38 922 135 101 110 468 268 127 88 83 166 108 83 191 177 66 54 77 32 32 32 32 32 25 27	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 52 54 33 51 32 22 22 22 22 23 23 24 24	7 4 4 7 9 9 7 5 10 5 256 260 65 65 17 13 15 14 11 8 6 6 4 4 2 2 2 1 2 2 1 2 2	21 21 20 20 20 23 21 15 15 16 22 15 12 15 15 15 15 16 19 15 15 15 15 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	16 20 22 29 28 28 25 24 25 17 17 19 28 25 37 32 32 38 27 14 17 16 12 13	1 1 2 2 2 2 1 1 1 1 1 1 1 2 2 1 1 1 1 1
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2	93 93 93 93 232 250 167 123 108 136 137 74 63 75 239 99 79 72 87 280 206 91 67 53 128	75 48 34 26 36 36 188 90 72 38 56 42 42 43 38 33 54 488 178 488 183 183 183 183 183 183 183 183 183 1	12 7 6 9 9 e130 125 40 30 125 110 9 8 6 6 6 43 3116 s195 54 300 10 e40 13	411 38 92 135 101 1468 268 268 83 166 108 83 166 54 77 32 30 29 29 22 25 27 26	48 62 38 28 26 31 227 359 189 84 92 78 60 59 61 51 62 56 43 35 29 28 22 28 22 21 22 21 22 21 22 21 22 21 22 21 22 21 22 21 22 22	7 4 4 7 9 9 7 5 10 5 256 260 65 65 17 13 15 14 11 8 6 6 4 4 2 2 2 1 2 2 1 2 2	21 21 20 20 20 23 21 15 15 16 22 15 12 15 15 15 15 16 19 15 15 15 15 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	16 20 22 29 28 28 25 24 25 17 17 19 28 25 37 32 32 38 27 14 17 16 12 13	1 1 2 2 2 2 1 1 1 1 1 1 1 2 2 1 1 1 1 1
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e Estimated. s Computed by subdividing day.

t Less than 0.5 ton.

# ROUGH RIVER AT FALLS OF ROUGH, KY. -- Continued

Particle size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B bottom withdrawal tube.) decantation: P. pieter; N, in native water;

	Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BWCM	BSWCM	BSNIM	BSWCM	BSWCM	BSWCM	BWCM	BWCM
		1.000		_						_	_				_	_		_	_				_	_				_	_	. •	
		0.500							8																						
		0.350													_										_					_	
	limeters	0,250	1	100	: :	100	100	100	66	:	!	901	;	100	!	!	i	;	;	:	:	:	:	:	;	ŀ	ŀ	;	;	!	:
	ze, in mil	0, 125	1:	66	18	66	66	66	66	:	:	66	100	66	:	:	:	100	100	100	ł	;	!	:	1	;	:	1	;	1	;
sen)	Percent finer than undicated size, in millimeters	0.062	100	66	9	66	66	66	66	100	8	8	66	66	100	8	100	66	66	66	100	100	100	1	100	100	100	100	100	;	:
chemically dispersed, m. mechanically dispersed. Suspended sediment	er than 111	0. 031	86	8 8	5 6	8	97	93	88	8 6		86	66	97	66	86	66	86	95	96	86	8	92	100	97	92	26	95	86	100	100
Suspended sediment	ercent fin	0.016	66	23.23	£ 5	88	98	88	68	20 8	2	92	92	81	96	82	26	96	62	98	68	8	96	06	<b>2</b> 6	85	73	82	88	16	66
Sur, Sur	ď	0.008	26	22 6	8 2	99	7.	4	2:	4.	28	82	88	92	11	92	21	88	28	72	22	74	83	72	67	9	- 22	62	67	15	86
ny aisper		0.004	83	2	92	22	09	49	2:	29	8	72	98	20	69	46	30	82	7	21	28	82	22	29	29	40	42	45	21	19	88
, cnemica		0.002	0,	9	- i	42	51	41	84 5	2.5	26	Z	63	41	22	31	16	49	33	43	5	47	88	26	45	28	34	39	37	47	2
in distinct water; C,	Concentration of suspension	analyzed (ppm)	186	298.	1,250	1,320	888	754	190	1,380	1,270	1,400	1,390	1,270	1,660	2,040	1.850	907	1,540	1,710	1,430	1.580	1,090	1,620	1,020	686	1,010	1,940	1,390	2, 130	1,840
w, m	Concentration	oi sampie (bpm)	726	166	786	828	651	291	80 <del>9</del>	1,170	1,060	1,120	454	933	1,050	3,170	3.170	735	2,460	1,280	876	211	099	2,160	1,250	1,250	1,280	1,640	2,120	1,310	1,130
Water	tem- per-	ature (°F)																												_	_
	Discharge	(gra)	612		2,340		6,060	4,050	6, 730	4,560	9,700	6,140	6,550	2, 530	2,390	2,810	2.810	3,400	4,820	4,390	6,320	7.020	1,080	1,420	2,690	2,690				1,260	
	Time		5:45 p.m.	4:30 p.m.	4:55 a.m.	12:05 p. m.	5:30 p.m.	4:20 p.m.	12:45 p.m.	2:20 p. m.	0:10 a.m.	4:15 p. m.	5:10 p.m.	6:20 a.m.	5:10 a.m.	12:10 p. m.	12:10 p. m.	5:10 a.m.	5:30 a.m.	4:30 p.m.	1:15 a.m.	5:45 p. m.	12:05 p. m.	5:10 a. m.	11:55 а. ш.	11:55 a.m.	6:10 p.m.	2:10 p.m.	6:20 p.m.	12:30 p.m.	12:50 p.m.
i	of of collection		Oct. 15, 1954			6, 1955	Feb. 7	21	Feb. 23	2 5	rep. 28	Feb. 28	Mar. 1	Mar. 6	Mar. 7	Mar. 16	Mar. 16				Mar. 22	Mar. 22	24	:	May 22	:					

### GREEN RIVER BASIN

### GREEN RIVER BASIN -- Continued

### ROUGH RIVER AT DUNDEE, KY.

LOCATION.--At auxiliary gaging station at bridge on State Highway 69 at Dundee, Ohio County, and 7.1 miles downstream from Caney Creek.

DRAINAGE AREA. --775 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 89°F Aug. 3; minimum, freezing point on many days during December to February.

EXTREMES, 1949-55.--Water temperatures: Maximum, 89°F Aug. 3, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Daily water temperatures reported are averages of twice-daily measurements. The data reported under extremes are the individual maximum and minimum measurements.

Records of discharge for gaging station near Dundee, for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

(Twice-daily measurements at approximately 6:30 a.m. and 6 p. m. 7

			/Twice-d	laily meas	urements	at appro	ximately (	6;30 a.m.	and 6 p.	m/		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	42	46	46	34	53	49	63	66	73	83	72
5 1	71	40	40	44	35	53	53	64	67	74	83	70
2 3	73	40	40	45	32	55	54	66	68	76	84	72
4	73	40	38	48	31	58	56	67	68	78	83	73
5	74	41	41	50	36	54	60	68	70	78	84	74
6	70	42	38	48	37	50	60	66	70	76	83	72
7	67	42	34	46	38	48	56	68	68	74	84	71
8	64	44	36	41	36	48	57	67	65	76	78	71
9	64	42	38	46	40	50	60	66	66	78	78	73
10	66	46	36	41	42	51	58	66	64	77	77	76
11	68	46	36	38	31	56	58	66	62	79	79	72
12	68	46	38	40	33	56	60	64	62	78	76	67
13	69	48	37	36	33	56	62	65	62	78	76	66
14	69	47	38	32	38	54	61	64	74	78	76	70
15	63	48	39	37	40	59	62	64	65	78	75	76
16	59	52	36	36	40	54	62	66	66	78	76	70
17	56	51	40	36	39	52	63	65	66	78	76	70
18	58	54	38	35	40	51	66	65	68	79	78	70
19	56	54	35	34	40	52	68	66	68	80	76	69
20	54	52	32	34	46	52	68	66	70	78	78	70
21	54	50	34	36	43	54	68	67	71	79	78	71
22	52	50	34	36	40	47	66	68	72	79	78	73
23	52	48	36	32	38	50	64	68	73	79	78	72
24	52	46	36	34	42	51	63	68	72	78	77	71
25	52	47	36	32	46	48	60	70	72	77	75	69
26	56	40	38	34	46	42	58	68	68	78	76	68
27	56	44	40	32	47	38	60	70	69	81	75	71
28	54	46	43	32	54	40	59	70	68	81	76	70
29	52	44	44	32		45	60	66	70	80	78	70
30	44	42	46	31		48	61	66	72	80	76	70
31	44		44	32		48		66		80	74	
Aver- age	61	46	38	38	39	51	60	66	68	78	78	71

GREEN RIVER BASIN--Continued

POND RIVER AT JEWEL CITY, KY.

LOCATION.--At Jewel City, Hopkins County, 200 feet upstream from Cypress Creek and three quarters of a mile upstream from mouth. DRAINAGE ARRA.-790 square miles (approximately). RECORNS ARIALMSLE.--Chemical analyses: April 1950 to August 1955. REMARKS.--Acidity determined to phenolphthalein end point. No discharge records available for this station.

Color 핁 ance (micromhos at 25°C) Specific conduct-467 516 534 544 606 258 541 416 Potential free 6000 Acidity (H+) Immediate mag- carbon-nestum ate 179 178 202 210 262 47 215 157 Calcium, Non-Hardness as CaCO, 233 234 234 273 118 230 176 Dissolved solids (residue on evap-oration at 180°C) 320 358 370 382 439 163 380 284 Chemical analyses, in parts per million October 1954 to August 1955 0.0 Ni-trate (NO₃) 9,55,5 010000 Fluo-ride (F) 다. 다. 다. 다. (C. 1) 8. 4. 7. 8. 8. 4. 0. 7. Bicar- Sul-bonate fate (HCO₃) (SO₄) 22222 268 46 232 166 Bicar-bonate 38 44 1 328823 Po-tas-Sium (K) 2.8.2.1 23.1.6 So-dium (Na) 2 2 2 2 24.25 25 8.3 15 Mag-ne-stum (Mg) Cal-cium (Ca) 4 4 6 0 9 £8°8 0,0,0,0,0 0,0,0,4 Man-ga-nese (Mn) Iron (Fe) 0.21 .21 .35 25.51 Aluminum (A1) Silica (SiO₂) Mean discharge (cfs) Oct. 13, 1954 ...
Nov. 17 .....
Dec. 28 .....
Jan. 26, 1955 .... Date of collection

### WABASH RIVER BASIN

### WABASH RIVER AT LAFAYETTE, IND.

LOCATION: --Temperature recorder at gaging station on right bank 20 feet downstream from Brown Street Bridge in Lafayette, 5.1 miles downstream from Wildca RE. Creek and at mile 311.9

DRAINAGE AREA. --7 2.7 and at mile 311.9

RECORDS AVAILABLE. --Water temperatures: July 1954 to September 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 90°F July 30-31, 1954; minimum, freezing point on many days during winter months.

EXHARMS. --Some regulation at low stages caused by power plants above station. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955

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	mper	mim	77	13	22	22	49	92	92	74	7	44	74	22	1	12	72	74	72	75	15	18	74	7	F	2		67	89	!	1	1	:	5
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	ust	min	;	;	;	;	;	;	;	;	;	;	;	;	;	;	;	1	;	;	;	;	1	;	;	1	2	42	4	8	83	83	62	:
	August	max	:	:	:	1	;	;	ł	:	;	;	1	:	;	ŀ	:	-	:	:	!	;	;	:	:	:	81	81	83	85	8	8	æ	ٺ
	July	min																																
	R	max																								_								Ц
	June	min	99	99	67	67	69	20	2	69	69	88	88	67	99	99	65	99	67	88	69	12	72	73	23	74	22	5	g	77	;	;	;	8
	Z	max	99	29	67	69	20	02	2	22	69	69	89	8	67	91	99	67	88	69	11	11	74	74	74	7	74	73	74	5.	;	;	:	6
	May	min	54	25	25	28	22	24	22	28	28	57	57	28	28	28	28	28	28	9	8	90	62	63	63	2	92	49	49	92	99	99	92	90
	Ms	max	54	Z	22	22	21	57	8	28	28	28	24	28	28	28	28	28	29	8	9	82	63	63	64	2	65	65	92	99	8	99	8	9
raph/	-11	min	41	41	42	42	43	4	45	45	45	46	46	48	48	2	21	22	22	23.	23	23	54	99	20	28	26	25	24	22	24	24	-	20
ermog	April	max	41	42	42	43	43	45	45	45	46	46	47	48	2	2	23	23	23	22	23	72	28	22	22	20	26	28	Z	2"	Z	25	:	22
Continuous ethyl alcohol-actuated thermograph/	rch	min	37	38	4	39	9	40	38	38	38	38	38	39	4	42	41	17	14	17	41	40	40	4	40	40	40	40	40	45	41	41	41	40
ohol-ac	March	max	38	40	40	40	40	40	40	38	38	38	39	41	42	42	42	14	1.5	17	41	41	41	42	42	40	40	40	40	#	41	41	41	40
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nuons e	February	max	31	32	32	32	32	32	32	35	32	32	32	32	32	31	31	3	6	3 2	33	33	33	33	ន	34	32	36	98	6	1	;	1	33
Conti	ary	min	31	31	31	31	31	31	:	;	33	33	33	33	33	32	33	33	8	32	32	32	32	32	32	32	32	33	33		8	33	32	32
	January	max	32	3	31	31	31	32	:	:	33	8	33	33	33	33	33	88	£	8 8	32	32	32	32	32	32	32	33	33	8	33	8	33	32
	nber	min	37	32	35	35	35	35	34	32	32	32	31	31	31	31	31	33	3 6	8 6	2 6	31	31	32	32	32	32	32	32	5	32	32	32	32
	December	max	38	37	38	35	35	35	32	34	32	32	32	31	31	31	32	8	2	3 8	2 6	32	31	32	32	32	35	32	32	2	32	32	35	33
	nber	min	51	8	46	46	46	46	46	46	46	47	46	48	45	45	45	44	: 4	4	: 4	45	4	4	42	4	4	40	30	3	38	88	ŀ	44
	November	max	52	21	8	46	46	46	46	46	47	47	47	46	46	45	45	45	4	: 4	45	45	45	4	44	42	41	40	9	30	38	88	;	45
	ber	min	69	2	69	-	88	88	25	8	62	62	63	63	83	63	8	6	3 2	1 6	2	29	60	27	22	57	24	92	: 25	ā.	22	2	53	61
	Octobe	max	20	2	12	22	11	89	99	2	8	63	63	63	8	63	2	2	2	3 2	2	29	29	28	24	24	22	22	92	28	20	22	24	88
	Log C	Š.	1	2	3	***	5a	9	7	8	9	10	11	12	13	14	15	~	7	8	19	20	21	22		24.	25	26		338	29	30.	31	Average

### VERMILION RIVER NEAR CATLIN, ILL.

LOCATION. --Temperature recorder at gaging station 75 feet upstream from Butler Branch bridge, 150 feet upstream from Butler Branch, 0.1 mile downstream from Salt Fork, and 24 miles northwest of Catlin, Vermillon County.

DRAINGE ARRA. --959 square miles.

RECORDS AVAILABLE. --Water temperatures: December 1952 to September 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 94°F July 30; minimum, freezing point Jan. 13, 1953, Feb. 6-10, 1955.

REXTREMES, 1954-55. --Water temperatures: Maximum, 95°F July 14, 1954; minimum, freezing point Jan. 13, 1953, Feb. 6-10, 1955.

REWARKS, 1-652-55. --Water temperatures: Maximum, 95°F July 14, 1954; minimum, freezing point Jan. 13, 1953, Feb. 6-10, 1955.

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mber	min	23	8 6	1	20	70	71	89	2;	14	89	4	8	65	67	70	72	72	7	4.	12	7	2	7	33	99	67	65	67	99	:	69
September	max	77	2.5	4	8	8	11	77	85	82	18	14	11	10	19	83	81	83	8	8	80	8	22	16	ξ!	69	69	13	69	69	;	92
ust	uţu	82	. 48	48	82	82	84	8	18	8	16	15	15	22	2	15	E	8	8	8	83	8	18	92	3.	16	77	19	8	= :	74	64
August	max	16 6	98	93	93	91	91	98	98	8	8	84	84	8	<b>8</b>	84	87	88	68	06	06	8	8	82	4	88	84	88	88	8	83	87
July	min	8 5	80	82	81	8	81	8	85	82	82	4	18	8	18	18	78	8	18	4	8	8	8	62	4.	8	84	98	8	8	98	81
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June	max	21	5 5	18	11	7.4	10	69	67	99	62	61	29	8	63	65	69	74	15	-11	7.8	11	18	12	£.	7.4	92	18	18	82	:	72
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May	max	99	200	73	7.1	2	89	67	63	9	9	9	20	63	67	10	69	69	11	74	72	23	-1	12	4.	73	18	74	11	67	89	69
T Control	min	84 :	23	23	22	54	21	49	21	54	28	28	61	20	26	55	29	9	62	63	63	63	62	6	58	54	28	9	61	61	;	57
Apri	max	52	200	20	28	58	25	26	29	62	8	63	62	61	29	09	62	62	64	64	99	99	65	62	91	29	62	62	65	65	1	19
ch Ch	min	£3 :	4 4	46	44	41	37	36	39	44	20	22	49	4	20	47	44	42	42	44	46	44	41	43	40	37	36	36	38	41	45	57
March	max	4:	4 <del>4</del> 6	41	46	44	41	39	44	20	54	54	53	21	53	21	47	45	46	46	48	48	44	44	77	40	37	39	7	45	6	46
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February March April May	max	33	3 8	33	33	33	32	32	32	33	33	34	34	34	34	33	33	33	33	33	33	33	33	83	33	33	9	4	!	!	;	34
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January	max	25	- 60	40	45	44	43	42	17	40	39	31	£	38	32	35	35	32	35	35	35	33	34	34	3	34	34	34	34	34	33	37
aper	i ii	25.5	36	36	36	36	36	35	32	32	35	35	35	32	32	35	35	32	35	35	35	35	35	35	35	35	35	37	3	36	35	35
December	max	88	S 5.	37	37	36	36	36	32	35	35	35	36	32	35	35	36	38	36	32	35	35	35	32	33	35	37	37	31	5	36	36
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### WABASH RIVER AT RIVERTON, IND.

LOCATION --Temperature recorder at gaging station on left bank at downstream side of Illinois Central Railroad bridge at Riverton, Sullivan County, 0.6 mile downstream from Turific Creek and at mile 162.0.
DRAINAGE AREA.--13.100 square miles, approximately.
RENCRINS AREA.--13.100 square miles, approximately.
RENCRIS 41914-15.--Water temperatures: July 1954 to August 1955, minimum, 33.7F Feb. 12-15, 1955.
REMERMES 1954-55.--Water temperatures: Maximum, 20, Aug. 29, 1954; minimum, 33.7F Feb. 12-15, 1955.

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	May	max	63	65	67	69	20	20	2	20	89	67	99	65	64	64	65	99	67	69	2 :	-	7.1	2	72	22	72	2.2	35	72	12	89	89	69
'aph/	-	min	44	46	48	22	21	53	54	2	54	22	57	28	26	61	61	61	61	62	62	<b>*</b>	64	99	65	<del>-</del>	19	9	88	61	9	8	:	28
er mog	April	max	46	48	20	21	23	22	32	22	22	24	28	29	61	61	61	61	62	62	64	4	99	99	99	65	64	-	61	61	61	62	:	29
nated ti	сh	mim	43	44	44	44	44	44	43	42	41	41	42	46	48	49	49	49	48	44	949	4	46	46	46	46	44	43	41	40	40	40	41	44
ohol-act	March	max	44	44	44	44	44	44	44	43	42	42	46	48	49	49	49	49	49	48	47	<b>4</b>	46	46	46	46	46	44	42	41	40	41	44	45
thyl alc	ary	min	34	34	32	36	35	35	35	36	37	38	34	33	33	33	33	35	36	35	35	92	36	36	36	32	35	3.6	88	40	;	:	:	35
Continuous ethyl alcohol-actuated thermograph/	February	max	34	35	36	36	36	35	36	37	38	38	38	34	33	33	32	36	36	36	36	92	36	36	36	36	36	3.7	6	43	:	:	:	36
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	November	TRRX	52	20	48	48	49	48	25	23	22	98	57	28	28	22	26	22	24	28	28	8	26	24	23	25	48	46	46	46	46	44	:	52
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### WHITE RIVER NEAR NOBLESVILLE, IND

LOCATION. --Temperature recorder at gaging station near center of span on downstream side of highway bridge, 1 mile west of Strawtown, 7 miles northeast ONOblestville, Hamilton Courty, and 9.5 miles upstream from Cicero Creek.

BAINAGE AREA.--814 square miles.

RECORDS AVAILABLE. --Water temperatures: October 1953 to September 1955.

EXTREMES. 1954-55.--Water temperatures: Maximum, 88°F July 21 to Aug., ininimum, freezing point on many days during December to February.

EXTREMES, 1953-55.--Water temperatures: Maximum, 88°F July 14, 1954; minimum, freezing point on many days during December to February.

EXTREMES, 1953-55.--Water temperatures: Maximum, 88°F July 14, 1954; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1954 to September 1955

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### WHITE RIVER AT NOBLESVILLE, IND.

LOCATION. --Temperature recorder at gaging station on right bank at downstream side of Logan Street Bridge in Noblesville, Hamilton County, 14 miles upstream from Closro Creek and 34 miles below dam at Clare.

DRAINGE REEA. --ST Square miles.

RECORDS AVAILABLE. --Water temperatures: November 1952 to September 1955.

RECORDS AVAILABLE. --Water temperatures: November 1957 to September 1955 in minimum, freezing point on several days during January and February. SKTREMES, 1992-55.—Water temperatures: Maximum, 94 F Aug. 1, 1953 minimum, freezing point on several days during January and February, 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 94 F Aug. 1, 1953 minimum, freezing point on several days during January and February, 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 94 F Aug. 1, 1953 minimum, freezing point on several days during January and February, 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 94 F Aug. 1, 1953 minimum, freezing point on several days during January and February, 1955.

Temperature (*F) of water, water year October 1954 to September 1955

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	May	max	89	2	73	12	74	73	7	69	65	65	99	99	99	64	99	74	73	73	22		92	4 5	9 0	2.2		2 0	2	22	88	5	72
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	December	max	40	40	39	39	33	40	40	38	40	4	39	39	39	\$	39	39	42	41	38	3.5	8 8	2.0	9 0	35		5 7	4 6	42	4:	<del>2</del>	39
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### WABASH RIVER BASIN--Continued

WHITE RIVER NEAR NORA, IND.

LOCATION: --Temperature recorder at gaging station on downstream side of center pier of bridge on State Highway 100, 2 miles east of Nora, Marion County, and familes upstream from Ea.

BALINGE AREA. --1,200 guare miles.

RECORDS AVAILABLE. --Water temperatures: June 1954 to September 1955.

RECORDS AVAILABLE. --Water temperatures: Maximum, 88°F and Min. 50°F and Maximum, 1957 and 1954 to September 1955. --Water temperatures: Maximum, 88°F and 1954 to September 1955. --Water temperatures: Maximum, 14, 1954; minimum, freezing point Feb. 2, 1955.

REMARKS. --Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

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	ust	min	88	83 5	83	83	84	84	83	88	42	78	11	11	75	16	16	2	: 8	81	82	2	2.2	18	11	28	29	52	2	2
	August	max	88	8	82	88	88	81	82	818	82	81	8	62	43	92	2 6	2 2	2.2	98	8	22 6	8	62	8	81	85	81	2	82
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to Septe	ril	mtm	200	25	22	55	57	22	22	20	20	28	62	61	20	8	5 6	2 4	2 2	25	99	9	52	92	28	8	62	8	:	28
r 1954 hermog	April	тах	51	8 8	22	28	28	28	28	8 8	8	63	64	8	19	61	65	2 %	88	8	8	67	8 8	8	8	62	92	98	:	61
:e $(^\circ F)$ of water, water year October 1984 to September 1985 Continuous ethyl alcohol-actuated thermograph/	March	min	46	4	46	41	44	41	4:	± 4	48	25	20	48	49	20	4:	<b>\$</b> \$	- 2	46	46	£3:	4 4	: 4	8	39	41	£ :	40	42
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### WHITE RIVER NEAR CENTERTON, IND.

LOCATION.--Temperature recorder at gaging station on right bank three-eighths of a mile downstream from highway bridge, 1 mile south of Centerton, Morgan Contry, 1,78 miles downstream from White Lick Creek, and at mile 202.6.

DRAINGAE ARRA.--435 square miles.

RENCORDS WATHABLE.-Water temperatures: September 1953 December 1953 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 87° f July 147-288 minimum, Freezing point Feb. 13, 14.

EXTREMES, 1953-55.--Water temperatures: Maximum, 89° f July 14, 1954; minimum, Freezing point Feb. 13, 14, 1955.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

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September	
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October	'Continuous ethyl alcohol-actuated thermograph
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Temperature ('F) of water, water year October 1954 to September 1955	/Contin
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	September	min	74	2	62	73	22	73	g	2	74	92	75	69	99	8	75	74	22	75	7	92	74	۶	9	9	22	72	22	72	89	89	:	73
	Sept	max	78	77	76	78	81	81	79	78	8	81	80	78	75	7	79	8	81	87	8	8	81	8	8	10	16	73	72	2	75	2	:	78
	August	min	84	25	26	83	2	82	82	8	79	81	8	18	7	2	12	77	77	80	8	82	83	æ	87	48	F	42	48	8	æ	87	92	8
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	July	min	42	79	80	79	78	78	8	8	81	81	82	8	8	8	42	82	28	77	92	82	42	8	82	8	8	81	<b>8</b>	82	<b>2</b> 6	8	84	80
	ř	max	80	82	8	82	81	81	85	82	8	8	84	8	8	8	82	79	28	78	48	42	81	87	8	82	8	82	87	84	98	8	88	83
	e l	min	67	69	20	72	23	74	11	69	69	67	67	65	63	62	62	64	99	68	2	72	73	72	బ	23	22	7.7	12	72	7	28	;	20
	June	max	20	77	22	7.	75	15	74	7.	69	69	67	67	65	8	64	99	68	12	72	72	74	75	92	2	2	73	7.4	9/	92	79	;	72
	May	min	63	64	99	69	20	20	69	89	65	65	5	65	25	25	64	99	67	99	67	89	20	2	2	7	7	69	2	7	69	67	99	63
	W.	max	64	99	69	2	17	7	2	69	89	65	65	5	65	2	99	67	89	89	89	2	02	20	2	11	7	71	74	74	7	69	88	69
	111	mim	47	49	21	53	53	57	88	22	26	86	28	28	61	29	61	09	61	63	63	\$	4	65	65	2	28	28	9	9	61	63	;	28
þ/	April	max	49	22	23	23	57	58	28	28	82	28	59	62	62	61	61	61	83	83	2	2	99	99	65	65	4	9	9	61	63	2	:	9
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Continuous ethyl alcohol-actuated thermograph/	March	max	46	45	43	4	45	45	43	42	41	4	48	48	48	48	47	48	48	46	45	45	45	47	45	44	43	44	44	42	43	44	47	45
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l alcoho	February	max	36	37	37	37	36	37	37	37	38	38	37	32	33	33	35	35	34	36	8	32	37	38	88	38	39	39	41	44	1	1	1	37
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×ι	nber	mim	44	46	45	44	44	42	40	40	40	40	42	42	43	43	43	43	44	44	43	40	40	38	39	41	42	43	44	46	44	42	41	42
	December	max	46	46	46	45	4	44	42	40	40	42	42	43	43	43	43	44	44	44	4	43	40	40	41	42	43	44	46	46	46	44	42	43
	November	min	48	46	46	48	84	20	22	52	53	54	53	55	54	22	54	53	54	26	28	8	55	53	21	2	28	49	48	47	46	44	:	51
	Nove	max	51	48	48	48	51	52	25	Z	72	22	55	24	26	28	26	55	26	28	9	8	28	22	23	2	22	20	48	48	48	46	;	53
	ber	min	;	;	;	;	;	99	65	63	63	89	70	2	20	69	25	62	9	28	26	8	56	24	24	8	28	28	20	22	26	54	23	19
	Octobe	max	:	;	;	;	;	02	89	65	67	72	72	20	12	11	69	64	62	90	28	82	28	28	20	8	9	28	8	28	22	24	24	63
		Day	1	2	3	4.		6,	7	8		10	11	12	13	14	15	16	17	18.	19	zo	21	22	23	24	25	26	27	28.	29.	30	31	Average

## EAST FORK WHITE RIVER AT SEYMOUR, IND.

LOCATION: --Temperature recorder at gaging station on left bank 1,700 feet downstream from highway bridge, 1 mile north of Seymour, 9.6 miles downstream from Said Creek, and at mile 219.2.

ALCORDS AVAILABLE, --Water temperatures: October 1954 to September 1955.

RECORDS AVAILABLE, --Water temperatures: Maximum, 84.F Aug. 2-7, minimum, freezing point on several days during January and February.

REMARKS. --Begulation at low flow by pumping plant 1,200 feet upstream from recorder. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

Temperature (°F) of water, water year October 1954 to September 1955 Continuous ethyl alcohol-actuated thermograph

			ı																															
	mber	min	:	:	;	:	ł	;	;	:	;	;	;	:	:	;	;	;	;	;	ŀ	;	;	;	72	2	8	89	99	65	99	67	:	:
	September	max	1	;	;	;	;	1	;	1	i	;	;	:	;	;	:	1	;	;	:	1	;	;	72	22	2	89	67	67	67	29	-	1
	ust	min	81	82	82	8	83	83	82	8	22	2	18	77	22	92	75	16	72	77	78	80	18	8	79	78	16	16	92	77	<u>چ</u>	77		42
	August	max	83	8	\$	84	84	84	25	82	80	8	48	28	77	77	16	92	77	42	81	82	83	85	82	8	4	42	4	8	8	8	:	80
	July	min	74	22	78	4	8	46	29	48	78	62	77	77	77	29	78	77	78	11	92	16	77	78	42	28	77	42	8	81	8	8	81	18
	Ju.	max	92	28	8	8	8	80	8	80	8	81	42	8	79	42	42	80	8	28	77	42	62	8	8	8	79	81	82	82	8	8	82	80
		min	65	67	89	69	11	73	69	89	67	65	65	64	61	9	61	63	99	89	20	11	11	72	73	5	10	69	69	20	2	73	;	89
	June	max	89	2	72	72	47	73	73	69	89	89	65	92	49	62	2	67	69	72	73	73	73	72	74	74	73	11	72	73	74	15	:	70
	y	min	62	63	65	67	89	68	67	92	64	63	63	63	62	61	61	9	67	67	89	69	11	2	20	23	11	88	71	12	69	99	65	67
	May	max	99	29	89	20	71	10	69	29	67	65	8	63	63	62	65	20	20	20	20	11	71	71	23	74	7.4	11	73	73	7	69	67	69
	11	min	47	20	23	25	75	57	22	23	53	22	24	28	9	61	61	90	61	62	83	\$	64	65	83	62	20	28	28	28	15	62	:	58
Æ.	April	max	20	23	26	26	22	9	28	26	24	28	28	9	- 19	62	62	- 19	63	49	92	92	65	65	65	89	3	29	09	61	63	65	1	90
rmogra	ch	min	47	47	45	46	48	46	42	40	41	43	47	21	25	20	20	21	47	4.7	47	4.7	4.7	47	46	45	4.5	42	40	40	41	43	44	46
ted the	March	max	48	48	46	49	20	20	46	42	43	47	21	23	23	25	25	25	21	8	8	47	20	20	41	46	48	45	42	41	43	4	4.7	48
Continuous ethyl alcohol-actuated thermograph/	ary	mim	32	32	32	32	32	32	32	32	32	34	33	32	32	32	32	32	33	67	33	35	89	40	39	39	8	40	4	43	;	:	1	35
yl alcoh	February	max	32	32	32	32	32	32	32	32	34	35	34	33	32	32	32	33	34	×	35	88	9	40	40	39	Q.	40	43	47	;	1	1	35
ons eth	ary	mim	38	88	38	39	7	47	44	42	4	7	9	33	37	36	36	35	32	32	35	35	25	32	34	33	33	33	32	32	32	32	32	37
Continu	January	max	39	39	39	4	41	47	47	44	42	41	41	40	39	37	36	36	36	52	35	35	192	32	34	34	88	33	33	32	32	32	32	37
71	nber	min	40	4	40	39	39	37	36	35	35	35	35	36	36	36	37	37	37	37	38	36	35	34	34	34	35	32	37	39	4	39	38	37
	December	max	41	42	7	40	40	39	37	36	32	36	36	36	36	37	37	37	37	8	38	36	36	32	34	36	38	37	39	41	41	41	38	38
	mber	mim	44	42	41	42	42	43	43	45	46	4.7	47	48	48	48	48	49	49	22	25	25	20	49	48	46	4.	43	42	42	42	4	;	46
	November	max	46	4	44	42	44	44	46	46	47	48	48	20	20	20	20	20	5	52	3	2	52	20	48	48	48	44	43	42	42	42	1	47
	ber	mim	:	;	ŀ	;	;	;	;	1	ł	1	1	65	67	89	63	28	22	20	75	53	25	25	53	23	7.	22	26	2	25	48	46	1
	Octok	max	;	;	;	;	;	;	;	;	ŀ	;	1	20	73	20	89	63	88	22	26	2	75	22	22	8	56	26	22	29	\$	25	48	1
	Day	na j	1	2	3	<b>4</b>		9	7	8	6	10	11	12	13	14.	15	16	17	18.	19	20	21	22.	23	24	25	26.	27	28	29	30	31	Average

### FRADEWATER RIVER BASIN

### PRADEWATER RIVER AT OLNEY, KY.

OCATION. --At gaging station at highway bridge at Olney, Hopkins County, 1.1 miles upstream from Cave Creek, 5.1 miles downstream from Flynn Creek, and 94 miles northeast of Princeton,

emical analyses: October 1949 to August 1950, October 1951 to September 1955. October 1951 to September 1955. RECORDS AVAILABLE. -- Chemical analyses: DRAINAGE AREA. -- 255 square miles. Water temperatures:

Sediment records: October 1852 to September 1855.

Sediment records: October 1852 to September 1855.

Sediment records: October 1852 to September 1855.

Hardness: Maximum, 286 ppm May 11-13; minimum, 37 ppm Reb. 22-23.

Speciate conductance: Maximum dally, 864 micromakos June 30; minimum dally, 79.1 micromkos Feb. 22.

Sediment concentrations: Maximum dally, 386 ppm Mar. 16; minimum dally, no flow on several days during September.

Sediment concentrations: Maximum dally, 1,301 cons. Apr. 24; minimum dally, no flow on several days during September.

EXTREMES, 1951-85.—Dissolved solids: Maximum, 547 ppm Jan. 13-20, 1954; minimum, 54 ppm Sept. 21-30, 1954.

Sediment concentrations: Maximum dally, 1,250 micromakos Jan. 19 1954; minimum, 13-20 micromakos Jan. 13-20, 1954; minimum, 13-20 micromakos Jan. 13-20, 1954; minimum, 13-20 micromakos Jan. 19 1952; minimum, 15-20 micromakos Jan. 19 1952, January 1954, Miter temperatures: Maximum, 87°F June 26, 29, 1952; minimum, freezing point on several days during December 1952, January 1954,

January and February 1955

Sediment concentrations (1952-55): Maximum daily, 764 ppm June 5, 1954; minimum daily, no flow on many days during October, November 1952, August to December 1953, Marking Market, September 1954, and September 1955.
Sediment loads (1922-55): Maximum daily, 1,370 tons Mar. 6, 1953; minimum daily, no flow on many days during October, November 1952, August to December 1954 and September 1955.
By Anglest, September 1954, and September 1955.
REWARRS.-Acidity determined to phenolophthalemic and point. Records of specific conductance of daily samples available in district office at Columbus, Onio.

Records of discharge for water year October 1954 to September 1955 given in WSP 1385. No flow Sept. 15-23, 25-30.

		Color	9	9	9	9	2	ıo.	80	5	80	Ų.	7	10
		Нф	6.7	9.9	6.7	7.1	7.1	6.7	6.2	6.3	6.4	9.4	6.2	6.1
	Specific conduct-	ance (micro- mhos at 25°C)	94.0	131	181	307	316	391	411	411	404	325	280	249
	1ty +)	Poten- tial free	0.1	-:	=:	~?	∾;	₹.	~!	~!	e,	₹.	~	٠. 
	Acidity (H+)	Imme- diate	0.3	4.	e,	4	o.	6	~	~	~!	e,		ķ
	sss O	Non- carbon- ate	12	33	22	111	119	166	170	171	162	93	109	96
	Hardness as CaCO ₃	Calcium, mag- nesium	37	51	02	129	138	175	183	182	175	33	119	103
in parts per million, water year October 1954 to September 1955	Dissolved solids	(residue on evap- oration at 180°C)	9	83	116	203	217	278	291	291	210	133	189	158
Septen	Ni-	trate (NO ₃ )	1.0	8.	ĸ.	9.	δ.	~?		~!	د.	9.	∞.	6.
r 1954 to	Fluo-	ride (F)	0.3	e.	~!	e,	-:	œ.	4.	7.	7.	~!	~	۲.
October	Chlo-	ride (C2)	1.6	2.0	1.6	3.2	3.4	5.2	3.0	8.2	4.2	3.0	3.5	4.0
ter year		fate (SO ₄ )	12	33	62	116	130	177	181	179	161	69	113	92
ion, wa	Bicar-	bonate (HCO ₃ )	30	23	81	20	22	10	12	12	16	97	01	6
per mil	Po-	Sium (K)	3.0	3.2	89	4.0	4.0	8. 8.	4.1	3.9	8.8	89	3.5	2.2
n parts	-os	dium (Na)	1.9	2.4	4.1	4.8	4.8	5.0	5.7	6.0	7.0	4.9	3.6	3.8
lyses, i	Mag-	Sium (Mg)	2.9	3.6	5.5	=	12	17	- 4	16	91	8.9	11	21
Chemical analyses,	Cal-	cium (Ca)	6.6	14	19	33	32	42	49	47	44	24	23	72
Chem	Man-	nese (Mn)	:	;	:	;	;	;	1	:	4.0	.48	2.3	1.4
	5	(Fe)	0.02	.03	.01	.02	.07	.03	.13	.03	6.	90,	10.	.02
	Alum-	mnm (A1)												
	(3)	(SiO ₂ )	5.1	4.3	5.7	6.4	9.9	6.7	8.3	8. %	8.9	6.1	6.3	8.2
		discharge (cfs)	20.8	14.0	8.33	8.70	6.78	.94	.40					
		Date of collection	Oct. 1-5, 1954	Oct. 6-11	Oct. 12-18	Oct. 19-23	Oct. 24-Nov. 2	Nov. 3-13	Nov. 14-24	Nov. 25-Dec. 4	Dec. 5-6	Dec. 7-9	Dec. 10-14	Dec. 15-17

TRADEWATER RIVER BASIN--Continued FRADEWATER RIVER AT OLNEY, KY. --Continued

Color - | | 00 | 112 32 28 1211 32 28 121 5.0 6.0 6.0 6.0 6.0 표 9.99.57 8.68322 Specific conduct-(micro-mhos at 25°C) 343 96. 158 244 303 160 324 230 142 95. 95. 96. 156 197 134 194 260 322 372 333 333 105 38 Poten-ttal free -; -; -666666 4444 Acidity (H+) [mmediate 4.4.6.6 carbonate 46 46 173 175 175 130 20 51 89 114 42 Hardness as CaCO, Calclum, magnestum 168 86 140 178 178 187 84 water year October 1954 to September 1955 -- Continued Dissolved solids (residue on evap-oration at 180°C) 261 226 226 280 281 292 232 78 102 156 197 114 Ni-trate No₃) 0.0 1.8 1.0 1.0 1.0 **ຄ**ໍຄິຄໍຄໍ4ໍຄໍ ............ Fluo-ride (F) 4 1 10 10 10 1 10,1-00 771111 Chlo-4 8 8 8 4 4 6 6 6 6 7 6 6 23.2.0.2 Sul-fate SO₄) 170 45 143 143 175 85 25 4 20 4 40 64 82,25,82 24 4 8 8 8 32 32 32 33 22 38 Bicar -bonate (HCO₃) 19 11 12 12 12 01 11 12 8 8 8 8 8 17 17 16 16 8 2 Chemical analyses, in parts per million, 22.00 - 4.4 Po-tas-sium (K) 4 8 0 8 4 6 4 8 0 8 4 6 So-dium (Na) 0.4.6.5.6.6 0.0.0 0.00 23.5 5.5 5.2 5.2 5.2 5.2 14 8.9 5.2 3.3 6.8 9.1 17 8.2 15 19 20 15 2.5 5.6 9.9 5.8 Mag-ne-sium (Mg) 222 9.3 14 17 12 17 25 Cal-cium (Ca) 42 33 40 33 40 33 33 4 9 35 24.94.42 882728 5 8 2.3 .32 .1.0 .1.9 2.3 .78 .27 .67 3.0 1.8 3.0 3.0 3.0 3.0 3.0 3.0 .83 22.22.22 Man-ga-nese (Mn) Fe) 912 83 13 222228 88 884986 Alum-inum (Al) Silica (SiO₂) 6.8 4.7.9 6.9 9.1 112 155 8.7 8.2 9.5 9.5 9.8 12 11 6.3 7.4 9.4 10 11 11 9.0 9.4 11 7.4 10 10 10 10 10 10 discharge (cfs) 57.1 1,002 272 86.7 86.7 87.3 58.0 Mean 11,370 1,450 1,447 210 1,170 1,520 1,863 1,580 1,693 1,231 362 129 864 1,690 3,310 2,510 1,132 282 176 340 1,402 715 1,580 Dec. 18-28, 1954...
Dec. 29-31...
Jan. 1-6, 1955...
Jan. 7-15...
Jan. 26-28... Feb. 22-23. Feb. 24-26 Feb. 27 Mar. 3-6 Mar. 7-9 7-8 9-10..... 21..... : : ..... 3-8.... 9-12..... Date of collection 29-Apr. 2 27-29. 29-Feb. 5 10-15 . 16-19 . 20-21 . 22-24 . 25-26 . 11-16. 17-20. Mar. Apr. Apr. Apr. Feb. Feb. Feb. Feb. Mar. Mar. Mar. Mar. Apr.

2575	© = = = =	00 m m m m	15	9
8 2 8 8	6.9 6.9 6.9 4.	4.6 6.9 6.9 1.7 1.1	7.2	;
373 452 541 278	163 284 312 251 291 335	353 275 501 469 457 90.3	126 138 147	298
21-1-21		21.91.10	004	0.2
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154 195 256 104	51 117 132 100 116	148 101 237 207 199 15	30 <del>34</del>	115
164 199 256 119	64 122 139 109 127 150	156 122 238 216 214 35	58 58 58 58	128
260 323 402 194	117 199 208 162 192 230	246 191 366 330 316 57	85 88	203
۵. ف. غ. <del>د</del> ن	9. 7. 7. 4.	1.3	1.1	0.7
હ્યું તું હ્યું	1 444444	धं वं वं धं वं धं	4.6	0.3
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15 2 6 15	16 8 8 11 14 8	10 26 11 18 18	22 22 23	91
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6.1 7.9 5.6	აი.4.ა.4. შ-1.84.0.	6.8 6.9 2.0 2.0	2.3	4.1
18 30 17 17	5.9 113 114 114 114	18 13 27 25 24 2.7	3.5 5.3	13
8447	24 28 28 32 32 32	33 28 51 45 46 9.6	51 <del>4</del> 51	8
2.8 4.0 5.1	2.1.22.1.22.1.23	2.3 5.4 6.4 1.4 0.5	74. 72. 80.	2.0
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13 23 2	8.4 111 9.0 111	12 8.3 9.9 7.7 4.1	2.4.3 7.6	
75.6 61.7 121 401	892 315 324 183 171 72.2	34.8 119 12.7 8.33 32.4 49.8	4.48 .28 .01	282
May 3-7, 1955 May 8-10 May 11-13 May 14-23	May 24 May 25-28 May 29-30 May 31-June 2 June 3-14	June 21-25 June 26-28 June 29-July 12 July 13-Aug. 2 Aug. 3-13	Aug. 18-23 Aug. 24-Sept. 13 Sept. 14-30	Time-weighted 282 8.4 average a a Represents 100 percent of days and 99

## TRADEWATER RIVER BASIN--Continued

# TRADEWATER RIVER AT OLNEY, KY .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Twice-daily measurements at approximately 8 a.m. and 5 p.m./

1	-																																1	1
	September	p.m	73	73	72	72	72	72	72	22	73	74	73	2	2	72	:	!	;	!	:	!	-	;	;	ł	2	:	-	1	:	!	:	
	Sept	a.B	69	69	8	8	69	69	8	69	20	73	72	69	99	69	:	;	:	!	;	!	:	ŀ	1	;	69	;	:	;	:	:	:	١
	ust	p.m.	84	84	82	82	84	84	83	81	83	81	81	42	74	23	74	73	72	77	12	82	82	20	;	28	92	94	1	77	28	77	9	6,
	August	a.m.	82	83	82	83	82	82	83	43	42	80	23	11	23	72	12	72	72	74	75	16	94	76	75	74	74	73	74	74	22	92	2	44
	У	p.m.	16	78	2	£	8	80	8	82	8	85	82	83	82	81	8	81	8	8	25	83	88	82	82	82	81	82	83	83	83	84	50	83
	July	a.m.	72	12	9/	=	78	78	78	79	81	80	81	8	81	80	8	80	8	8	8	8	80	81	79	æ	42	42	8	82	81	85	28	62
		p.m.	67	8	69	2	2	20	89	67	8	2	64	25	62	8	\$	99	89	2	75	2	73	72	7.	22	73	11	Z	72	7	74	1	ę,
	June	a.m.	85	99	99	8	69	8	8	67	99	65	62	62	62	61	62	63	£	67	8	20	20	2	72	72	73	69	69	8	11	73	:	9.1
	,	p.m.	92	99	67	8	20	89	69	89	89	8	99	99	99	25	63	99	99	99		67	89	8	8	2	12	72	23	;	2	8	ě	gg.
p.m./	May	a.m.	62	62	63	99	67	67	29	67	65	65	99	99	65	64	64	64	65	2	9	99	99	89	88	89	20	20	2	72	2	8	8	£
o pue	1	p.m.	20	22	22	28	62	19	28	8	8	9	8	61	61	61	62	65	88	8	8	8	99	64	2	62	29	61	62	62	ဆ	45	:	33
8a.m.	April	a.m.	48	20	21	24	28	9	26	26	22	 8	28	9	8	8	8	8	9	99	67	8	99	65	2	63	61	22	8	61	62	62	;	ę,
mately	ч	ä.	22	22	26	88	57	53	ವ	49	21	54	28	26	26	26	28	28	53	49	49	51	49	20	51	20	49	42	41	43	44	46	40	53
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ents at	ry	.ш. а	-	;	!	:	;	ŀ	31	88	40	41	35	34	33	37	68	\$	40	9	44	45	42	41	4	42	43	46	20	22	;	1	:	
ısurem	February	m. p	37	36	33	33	34	37	37	35	38	42	36	33	32	34	36	39	39	88	41	45	43	4	40	40	41	43	47	54	:	:	:	36
ily me	y.	.ш.	44	45	45	<del>2</del> 8	51	20	46	45	46	43	42	40	36	36	37	 88	37	31	8	 8	36	36	32	35	32	36	32	32	34	83	36	36
Twice-daily measurements at approximately 8	January	m. p	44	43	43	47	49	21	46	44	45	44	41	40	37	34	36	36	36	36	35	35	35	32	34	33	33	34	32	32	32	34	44	9.9
Ð	ı	m. a.	14	2	43	4	2		_		40		- 68		_								_	:				_	_	_		9;	-	
	December	m. p.	-	_	41	_	_	40	_		_	_		_	_	_	_				_		32		_				_		_	45	-	óś
		m. a.	L	_	45 -	_	_	-	_		47		3	_	_				_		_		49 3									£3.	-	48 3
	November	m. p.	Ļ	_	_	_	_	_	_	_	_	_		_		_		_		_				_	_	_	_	_	_	_	_	_	-	Н
		a.	70 4	_	71 42	_	_		_		67 44	_	69	_	71 46	_	_	31 50	_	_			_	48	_	55 47	_		_	_		49 42	4	63 48
	October	. p. ı			- 69	_					- 64		67				_		- 28		_	_	-	-		21		_				64:	4	15
		a.m	L	_	_	_			_					_					_			_		:										
							:								:	:	:										:				:	:	:	<b>G</b> .
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			-	2	9	4	2	9	7	8	6	10	11	12.	13	14.	15	16	17	18.	18	20	21	22	23	24	25	26,	27	28	29.	30	31	
																																		٠,

### TRADEWATER RIVER BASIN -- Continued

### TRADEWATER RIVER AT OLNEY, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955

			nded sedim	ent, water ye			mber 1955		
		October		#	November		ļ	Decembe	·
	Mean		d sediment	Mean		ed sediment	Mean		1 sediment
Day	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons
	charge (cfs)	tration	per	charge	tration	per	charge	tration	per
	(CIS)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	3.2	60	0.5	8.8	8	0.2	0.8	1	<del>-</del>
2	12	56	1.8	5.6	5	.1	1.5	2	(t)
3 4	32 30	46 27	4.0 2.2	2.6 2.0	10 12	.1	1.7 2.3	3 6	
5	27	23	1.7	1.3	9	h '1'	8.4	3	0.1
				ll .		]]	[]	Į	
6	20	16	.9	1.0	7		70	10	s 2 · 4
7 8	16 12	24 32	1.0 1.0	.8 .5	7 3	1	353 207	60 162	57 s 100
9	10	19	.5	.5	2	[[	80	23	5.0
10	14	21	.8	.5	3		51	9	1.2
11	12	8	.2		4	11 1	38	8	.8
12	12		e 3 -	.4 .4	8		36	6	.6
13	10	160	4.3	.4	5	]] ]	126	14	s 3.4
14	6.8	135	2.5	.4		<u> </u>	496	53	s 78
10	6.4	72	1.2	.4			474	66	s 95
16	3.2	47	.4	.4		li i	225	2	1.2
17	1.9	31	.2	.4		} (t)	107		
18	18	19	.9	.4	1	!! !	75		
20	18 12	17 16	.8 .5	.4	2 4	ll l	57 48		1
				.*	7		20		e.1
21	7.2	13	.2	.4	4	[[ ]	41	í	11
22 23	4.0 2.3	10 13	.1 .1	.4	4	<b>[</b> ]	35 30		11
24	1.1	11	h .1	.4	4	11	27		H
25	.8	8		.5	5		24	1	.1
26	1.0	10	} (t)	i	_		22		.1
27	.8	10 10		.5 .7	5	li l	20	2 2	:1
28	.7	11	J i	.7			248	204	s 143
29	15	15	.6	.7	2		1,020	276	s714
30	20 14	17 13	.9 .5	.7	2	۱ ۲	1,050 937	228 54	646 137
Total.	343.4		30.9	33.0		0.7	5,911.7	3-	1,985.9
====			30.5	50.0			0,511.7		1,500.0
	679	January 7			February		. 500	March	
1	418	5	13 5.6	36 61	5 16	0.5 2.6	1, 720 1, 720	143 68	664 316 ·
3	197	3	1.6	186	26	13	1.650	47	209
4	134	3	1.1	228	9	5.5	1,490	20	, 80
5	109		e.9	259	61	s 56	1,040	17	48
6	97	3	.8	1,150	214	664	743	13	26
7	90		h	1,360	174	639	538	10	14
8	79 72		e.2	1,380	120	447	349	9	8.5
9	64			1,440 1,460	56 26	218 102	199 161	3 5	1.6 2.2
- 1								•	İ
11	63	1	.2	1,160	15	47	140	7	2.6
12	70 90	2 3	.4 .7	663 421	5 4	9.0 4.5	128 115	7	2.4 2.2
14	122	4	1.3	161	4	1.7	104	5	1.4
15	130	5	1.8	138	5	1.9	127	11	s7.0
10	1.5		ا م ا		_				
16 17	115 111	5 5	1.6 1.5	140 173	5 . 4	1.9 1.9	625 651	398 124	s 708 218
18	111	4	1.3	230	4	2.5	1,060	114	326
19	95	2	.5	212	4	2.3	1,120	122	369
20	79	5	1.1	225	10	s8.9	1,410	105	400 _
21	70	8	1.5	1,170	205	648	1,970	182	968
22	66	11	2.0	1,480	155	619	3,100	130	1,090
23	69	6	1.1	1,560	103	434	3 460	108	1,010
24 25	79	2	.4	1,800	68	330	3,370	92	837
20	78	1	.2	2,020	47	256	2,840	30	230
26	68	1	.2	1,770	16	76	2, 180	10	59
27 28	57 49	5 6	.8 .8	1,580	67	286 700	1, 480 785	7 5	28
29	40	7	.8	1,640	158	700	785 566	9	11 14
30	40	4	.4				346	5	4.7
31	35	4	.4	<u></u>			195	3	1.6
Total .	3,576		42.7	24, 103		5,578.2	35, 382		7,659.2
e Estim									

e Estimated. s Computed by subdividing day. t Less than 0.05 ton.

### OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

### TRADEWATER RIVER BASIN -- Continued

### TRADEWATER RIVER AT OLNEY, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955--Continued

							1955Cont		
		April	d sediment		May	d sediment	ļ	June	d sediment
_	Mean	Mean	a searment	Mean	Mean	a sealment	Mean	Mean	a sealment
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge (cfs)	tration	per day	charge (cfs)	tration	per day	charge (cfs)	trat'on	per day
		(ppm)			(ppm)			(ppm)	
1 2	159 144	6 2	2.6 .8	242 122	8 11	5.2 3.6	129 80	22 19	7.7 4.1
3	156	1	.4	97	11	2.9	59	22	3.5
4	171	4	1.8	80	13	2.8	48	20	2.6
5	158	4	1.7	74	34	6.8	38	16	1.6
6	144	3	1.2	ا م	22	3.9	33	15	1.3
7	173	1	.5	66 61	19	3.1	29	17	1.3
8	256	2	1.4	55	15	2.2	69	18	3.4
9 10	182	1	.5	52	13	1.8	213	12	6.9
10	140	3	1.1	78	11	2.3	334	28	25
11	259	26	18	56	3	.4	177	27	13
12	781	51	108	50	5	.7	330	13	12 15
13 14	1,400 1,440	113 123	427 478	257 770	36 74	s 38 154	407 314	14 15	13
15	1,430	90	347	695	35	66	146	16	6.3
	-								
16 17	1,340	30	108	506	8 9	11	93 68	12 13	3.0 2.4
18	936 638	15 12	38 21	414 282	4	10 3.0	52	15	2.4
19	389	7	7.4	134	4	1.4	41	17	1.9
20	182	5	2.4	90	5	1.2	33	20	1.8
21	404	53	s 69	77	13	2.7	27	19	1.4
22	680	54	99	225	25	s 19	23	17	1.0
23	1,010	115	314	821	263	s 642	21	16	.9
24 25	1,480 1,480	328	1,310	892	136 17	328 30	18 85	18 202	.9 s58
20	1,400	215	859	644	11	30	"	202	300
26	1,680	82	372	368	7	7.0	148	187	75
27	1,780	26	125	150	15	6.1	128	55	19
28 29	1,470 770	15 9	60 19	98 158	13 14	3.4 s7.3	80 48	27 6	5.8 .8
30	564	3	4.6	489	60	79	34	5	.4
31				341	108	99			
Total.	21,796		4, 798.4	8,444		1,543.8	3, 305		291.1
		July			August			September	
1	24	3	0.2	2.6	3	h	0.2	11	)
2	18	3 2	.1	1.7	3 1		.1	11 4	
		3	.1 .1	1.7 1.3	3 1 5	ω	.1 .1	11 4 7	
2 3	18 14	3 2 2	.1	1.7	3 1	(t)	.1	11 4	
2	18 14 10 7.5	3 2 2 2 2 5	.1 .1 .1 1.0	1.7 1.3 .9 .6	3 1 5 8 9	(t)	.1 .1 .1 .1	11 4 7 7 11	
2	18 14 10 7.5	3 2 2 2 2 5	.1 .1 .1 1.0	1.7 1.3 .9 .6	3 1 5 8 9		.1 .1 .1 .1	11 4 7 7 11	
2	18 14 10 7.5	3 2 2 2 2 5	.1 .1 .1 1.0	1.7 1.3 .9 .6	3 1 5 8 9	0.1	.1 .1 .1 .1	11 4 7 7 11	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7	3 2 2 2 5 5 2 7 11 32	.1 .1 .1 1.0 (t) .1 .1	1.7 1.3 .9 .6 .4 2.4 3.6 2.7	3 1 5 8 9 5 10 10 8	0.1 .1 .1	.1 .1 .1 .1 .1	11 4 7 7 11 8 5 5	(t)
2	18 14 10 7.5 5.6 4.2 3.1	3 2 2 2 5 5 2 7	.1 .1 .1 1.0 (t)	1.7 1.3 .9 .6 .4 2.4 3.6	3 1 5 8 9 5 10	0.1 .1	.1 .1 .1 .1 .1 .1	11 4 7 7 11 8 5	(6)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6	3 2 2 2 5 5 2 7 11 32 27	.1 .1 .1 1.0 (t) .1 .1	1.7 1.3 .9 .6 .4 2.4 3.6 2.7	3 1 5 8 9 5 10 10 8	0.1 .1 .1	.1 .1 .1 .1 .1	11 4 7 7 11 8 5 5	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6	3 2 2 2 5 5 2 7 11 32 27	(t) (t) (1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2	3 1 5 8 9 5 10 10 8 2	0.1 .1 .1 (t)	.1 .1 .1 .1 .1 .1	11 4 7 7 11 8 5 5 3 2	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6	3 2 2 2 5 5 7 11 32 27 11 5 5	(t) (t) (1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2	3 1 5 8 9 5 10 10 8 2 5 5 129	0.1 .1 .1 (t) .2 .2	11 11 11 11 11 11 11 11 11 11 11 11 11	11 4 7 7 11 8 5 5 3 2 2 7	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6	3 2 2 2 5 5 2 7 11 32 27	(t) (t) (1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2 12 15 312	3 1 5 8 9 5 10 10 8 2	0.1 .1 .1 (t)	.1 .1 .1 .1 .1 .1	11 4 7 7 11 8 5 5 3 2	(t)
2	18 14 10 7.5 5.6 4.2 3.1 1.2.7 2.6 2.0 1.6 1.3	3 2 2 2 5 5 2 7 11 32 27 11 5 6	(t) (t) (t) (t) (t) (t) (t) (t) (t) (t)	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2 12 15 312 118 42	3 1 5 8 9 5 10 10 8 2 5 129 325 245	0.1 .1 .1 (t) .2 .2 109 104 28	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .	11 4 7 7 11 8 5 5 5 3 2 7 7 6	0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3	3 2 2 2 5 5 2 7 11 32 27 11 5 5 6 11	(t) (1 .1 .2 .2 .2 .1 ) (t) .1 .1	1.7 1.3 .6 .4 2.4 3.6 2.7 5.2 12 15 312 118 42	3 1 5 8 9 5 10 10 2 2 5 129 325 245	0.1 .1 .1 (t) .2 .2 109 104 28	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .	11 4 7 7 11 8 5 5 3 2 2 7 7 6	0
2	18 14 10 7.5 5.6 4.2 3.1 1.2.7 2.6 2.0 1.6 1.3	3 2 2 2 5 5 2 7 11 32 27 11 5 6	.1 .1 .1 1.0 (t) .1 .2 .2 .2 .1 (t)	1.7 1.3 .9 .6 2.4 2.4 3.6 2.7 5.2 12 15 312 118 42 24	3 1 5 8 9 5 10 10 8 2 5 129 325 245	0.1 .1 .1 (t) .2 .2 109 104 28	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .	11 4 7 7 11 8 5 5 5 3 2 7 7 6	0
2 3 4 5 6 7 7 8 8 9 10 11 12 13 14 15 15 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	18 14 10 7.5 5.6 4.2 3.1 2.6 2.0 1.6 1.3 1.3 1.3	3 2 2 2 5 5 7 111 5 5 6 6 11 1 2 28 14 8 10 10	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1.7 1.3 .9 .6 2.4 3.6 2.7 5.2 12 118 42 24 15 9.8 6.2	3 1 1 5 8 9 9 5 10 10 10 8 2 2 5 5 129 325 245 141 113 116	0.1 .1 .1 (t) 2.2 109 104 28 12 5.7 3.0 1.9	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 11 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 18.	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 1.6 1.3 9 1.2	3 2 2 2 5 5 2 7 7 11 32 227 21 5 6 6 11 28 14 8	.1 .1 .1 .1.0 (t) .1 .2 .2 .2 .1 (t)	1.7 1.3 .6 .4 2.4 3.6 2.7 5.2 11 115 312 118 42 24 15 9.8	3 1 5 8 9 5 10 10 10 8 2 2 5 5 129 325 245 145 113	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 111 8 5 5 3 2 2 7 7 6	0 0 0 0
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 9 1.2 1.4 1.4 1.3 1.3	3 2 2 2 2 5 5 5 2 7 111 5 5 6 6 111 228 14 14 12 12	(t) 1.1 1.0 (t) 1.1 2.2 2.2 3.1 (t) (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1 (t) 1.1	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2 115 118 42 24 15 9.8 6.2 3.9	3 1 5 8 9 9 5 10 10 10 8 2 2 5 5 5 129 325 245 141 113 116 64	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 0	111 4 7 7 11 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 9 1.2 1.4 1.4 1.3 1.3 1.7	3 2 2 2 5 5 7 111 5 5 6 6 11 1 2 28 14 8 10 10	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .2 .2 .2 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2 115 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4	3 1 1 5 8 9 9 5 10 10 10 8 2 2 5 5 129 325 245 141 113 116	0.1 .1 .1 (t) 2.2 109 104 28 12 5.7 3.0 1.9	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 11 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.0 1.6 1.3 3.9 1.2 1.4 1.4 1.3 1.3 1.3 1.7	3 2 2 2 5 5 5 6 6 11 28 8 10 12 11 11 10 10	1	1.7 1.3 .9 .6 2.4 3.6 2.7 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9	3 1 1 5 8 8 9 9 5 10 10 10 8 8 2 2 5 5 12 9 3 2 5 2 4 5 5 14 11 3 11 6 6 4 5 1 4 0 0 4 0	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0	111 4 7 7 11 8 5 5 5 3 2 2 7 7 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2.2 3.1 2.7 2.6 6 1.3 3.9 1.2 1.4 1.4 1.3 1.3 1.7 1.9 2.2 2.2 12	3 2 2 2 2 5 5 5 6 6 11 28 14 8 10 12 11 11 10 8	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .	1.7 1.3 .9 .6 .4 2.4 3.6 2.7 5.2 12 15 312 118 42 24 15 8.2 2.3 9.8 6.2 3.9	3 1 5 8 9 5 10 10 10 8 2 2 5 5 129 325 245 141 113 116 64 40 40 40 32	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .0 0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.0 1.6 1.3 3.9 1.2 1.4 1.4 1.3 1.3 1.3 1.7	3 2 2 2 5 5 5 6 6 11 28 8 10 12 11 11 10 10	1	1.7 1.3 .9 .6 2.4 3.6 2.7 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9	3 1 1 5 8 8 9 9 5 10 10 10 8 8 2 2 5 5 12 9 3 2 5 2 4 5 5 14 11 3 11 6 6 4 5 1 4 0 0 4 0	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0	111 4 7 7 11 8 5 5 5 3 2 2 7 7 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 3.9 1.2 1.4 1.3 1.3 1.7 2.2 2.2 2.2	3 2 2 2 5 5 5 6 6 11 1 10 12 11 10 8 8 8 7 7	(t) (t) (1) (2) (1) (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	1.7 1.3 9 .6 4 2.4 3.6 2.7 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3	3 1 5 8 9 9 5 10 10 10 8 2 2 5 5 5 129 325 245 141 113 116 64 51 40 40 32 28 26	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 1.6 1.3 3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1	3 2 2 2 5 5 5 5 6 6 11 28 8 100 12 11 11 10 8 8 8 7 5 5	(t) (t) (1) (2) (1) (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	1.7 1.3 .9 .6 2.4 3.6 2.7 5.2 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 8 6.2	3 1 5 8 9 9 5 100 100 8 8 2 2 5 5 129 3 225 245 113 116 4 4 0 4 0 4 0 3 2 2 8 2 6 2 5 5	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 9 1.4 1.4 1.3 1.7 1.9 2.2 2.2 2.2 2.2 2.3 2.3 2.4 2.5 2.6 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1	3 2 2 2 5 5 5 6 6 11 1 10 12 11 10 8 8 8 7 7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .	1.7 1.3 9 .6 4 2.4 3.6 2.7 5.2 12 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.8 .6 .5 .4	3 1 5 8 9 9 5 10 10 10 8 8 2 2 5 5 129 325 245 141 113 116 64 40 40 22 8 26 25 22	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 .9 1.2 1.4 1.4 1.3 1.7 1.9 2.2 2.2 2.2 2.2 2.2	3 2 2 2 2 5 5 5 5 6 6 11 1 10 0 12 11 10 0 8 8 8 8 7 5 2 2 2 2 2 2 2 2 2 2 2 2 2	(t) (t) (1) (2) (1) (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	1.7 1.3 9.6 4 2.4 3.6 6.2 17 5.2 12 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 8 6 .5 4 .3 3.3	3 1 5 8 9 9 5 100 100 100 8 8 2 2 5 5 1299 325 245 1413 1116 644 51 140 440 440 42 28 28 26 22 20 18	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 1.6 1.3 1.9 1.2 1.4 1.3 1.7 1.9 2.2 2 12 53 35 22 14 9.2 5.2 3.4	3 2 2 2 2 5 5 5 6 6 11 1 11 10 8 8 8 7 5 5 2 2 2 3 3	(t) (t) (1) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	1.7 1.3 9.6 4 2.4 3.6 6.2.7 12 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.3 .8 6.5 .4 3.3 .3	3 1 5 8 9 9 5 10 10 10 8 2 2 5 5 129 3245 141 113 116 64 40 32 2 8 2 6 2 5 2 2 2 2 10 18 17	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 	0 0 0 0 0 0 0 0 0 0
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 2.0 1.6 1.3 1.3 1.3 1.7 1.9 2.2 2.2 2.2 2.2 2.3 4.4 1.3 1.3 1.3 1.3 1.7 1.9 2.2 2.2 2.2 2.3 2.2 2.3 2.3 2.3	3 2 2 2 5 5 5 6 6 11 1 10 12 28 8 8 8 7 7 5 2 2 2 3 3	(t)	1.7 1.3 .9 .6 .4 2.4 3.6 5.2 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 .8 .6 .5 .4 .3 .3 .3 .2 5590.7	3 1 5 8 9 9 5 100 100 100 8 8 2 2 5 5 1299 325 245 1413 1116 644 51 140 440 440 42 28 28 26 22 20 18	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	111 4 7 7 111 8 5 5 3 2 2 7 7 6 6	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 6 1.3 3 1.3 1.3 1.3 1.3 1.7 1.9 2.2 2.2 12 53 35 22 14 9.2 5.2 3.4 265.9 ischarge for	3 2 2 2 2 5 5 2 7 7 111 32 27 11 5 5 6 6 11 28 14 8 10 12 11 11 10 8 8 8 8 7 7 5 2 2 2 2 2 2 3 year (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfsyear (cfs	(t) .1 .1 .1 (t) (t) .1 .1 .1 .1 .1 .1 .1 .1 .1 .2 .2 .1 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .2 .1 .1 .1 .1 .2 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1.7 1.3 .9 .6 4 2.4 3.6 2.7 5.2 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 .8 .6 .5 .4 .3 .3 .3 .3 .2 .590.7	3 1 5 8 8 9 9 5 100 100 8 8 2 2 5 2 4 5 14 1 1 3 1 1 6 6 4 4 5 1 4 0 4 0 4 0 4 0 2 2 8 2 6 2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 	(t) 103,752.3
2	18 14 10 7.5 5.6 4.2 2.3.1 2.7 2.6 2.0 1.6 1.3 3.9 1.2 1.4 1.3 1.7 1.9 2.2 2.2 1.4 2.2 2.2 1.4 9.2 2.2 1.4 9.2 2.3 3.4 9.2 2.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 3.4 9.2 9.2 9.2 9.2 9.2 9.2 9.2 9.2 9.2 9.2	3 2 2 2 2 5 5 5 5 5 6 6 11 1 1 10 8 8 8 7 5 5 2 2 2 2 3 3	(t) .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1.7 1.3 .9 .6 .4 2.4 3.6 5.2 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 .8 .6 .5 .4 .3 .3 .3 .2 5590.7	3 1 5 8 8 9 9 5 100 100 8 8 2 2 5 2 4 5 14 1 1 3 1 1 6 6 4 4 5 1 4 0 4 0 4 0 4 0 2 2 8 2 6 2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 	(t)
2	18 14 10 7.5 5.6 4.2 3.1 2.7 2.6 6 1.3 3 1.3 1.3 1.3 1.3 1.7 1.9 2.2 2.2 12 53 35 22 14 9.2 5.2 3.4 265.9 ischarge for	3 2 2 2 5 5 2 7 111 32 27 11 5 5 6 6 11 28 14 8 10 12 2 11 11 10 0 8 8 7 5 2 2 2 2 3 3	(t) .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	1.7 1.3 .9 .6 4 2.4 3.6 2.7 5.2 12 15 312 118 42 24 15 9.8 6.2 3.9 2.7 2.4 1.9 1.3 .8 .6 .5 .4 .3 .3 .3 .3 .2 .590.7	3 1 5 8 8 9 9 5 100 100 8 8 2 2 5 2 4 5 14 1 1 3 1 1 6 6 4 4 5 1 4 0 4 0 4 0 4 0 2 2 8 2 6 2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.1 .1 .1 (t) .2 .2 109 104 28 12 5.7 3.0 1.9 .7 .4 .3 .2 .1 .1	.1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	111 4 7 7 111 8 5 5 3 2 2 7 7 6 	(t) 103,752.3

TRADEWATER RIVER BASIN--Continued TRADEWATER RIVER AT OLNEY, KY.--Continued

Particle size analyzes of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawal tube; D. decumidation; P. pighette; S. sizew; N. in native water; W. in distilled water; C. chemically dispersed; M. mechanically dispersed)

	Methods of	·	BSWCM	BSWCM	BSWCM	BWCM
		1.000				
		0.500				
		0.350				-
	llimeters	0.125 0.250 0.350 0.500 1.000				
	ize, in mi	0.125	100	1 1	100	; ;
	dicated s	0.062	66	9 9 9	66	1 1
ediment	er than in	0.031	66	66	86	8 :
Suspended sediment	Percent finer than indicated size, in millimeters	0.016	26	96	96	100
Su	н	0.004 0.008 0.016 0.031	92	89	87	88
		0.004	80	81	92	8 8
		0.002	67	8 8	63	74 65
Suspended sediment	Concentration	analyzed (ppm)	1,030	1,030	943	976 466
	u	of sample (ppm)	706	413 694	552	310
Water	tem- per-	ature (°F)				
	Discharge (cfs)	Ì	214	777 651	1,470	903 88
	Time		11:00 a.m.	7:30 a.m. 11:15 a.m.	5:00 p.m.	6:00 p.m. 12:55 p.m.
	Date of collection		Dec. 28, 1954	Dec. 29 7:30 a.m. Mar. 16, 1955 11:15 a.m.	Apr. 24	May 23June 25

### OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 51, AT GOLCONDA, ILL.

.--About 950 feet upstream from dam, lock and dam 51 (mile 903.1) at Golconda, Pope County, 3,150 feet upstream from Long Branch, and 6,000 feet

Records of discharge for water year October Mornstream from Loves Branch.

PRAINAGE AREA.—143,900 square miles, approximately (at gaging station).

RECORDS AVAILABLE.—Chemical analyses: October 1954 to September 1955.

RATERNES, 1954—52.—1045.001 square miles, best october 1955.

RATERNES, 1954—52.—1045.001 square miles Maximum, 327 ppm Sept. 21-30; minimum, 144 ppm Mar. 1-10, 12, 15-17, 19-20.

RATERNES: Maximum, 208 ppm Sept. 11-20; minimum, 33 ppm Mar. 12, 15-17, 19-20.

Specific conductance: Maximum ally 547 micromhos Sept. 28-30; minimum daily, 197 micromhos Mar. 9.

Water temperatures: Maximum ally 31 to Aug. 3, 5; minimum, freezing point Jan. 28.

REMARKS.—Records of specific conductance of daily samples available in district office at Columbus, Ohio. Record 1954 to September 1955 given in WSP 1385.

1955
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analyses, i
Chemical

	Color	994921	2882111	6 11 21 21	115 20 6 7
į	ьн с	F. C. C. C. C. C. C. C. C. C. C. C. C. C.	821.834	4.5.7.	22. 24.2
		FFFFFF			<u> </u>
	Specific conduct- ance (micro- mhos at 25°C)	429 419 386 340 336 355	374 403 357 393 335	344 257 300 236	220 234 324 324
	Total acid- ity as H _z SO ₄				
	carbon-	94 87 100 83 83 79	88 8 8 9 9 0 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 4 6 4 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	24 45 50 60 80 80 80
	Hardness as CaCO ₃ as Calcium, Nagrasium as Cari	157 152 138 126 128 128	142 148 128 115 121	143 103 121 97	93 118 136
55	Dissolved solids (residue on evap- oration at 180°C)	260 257 238 209 200 218	228 244 214 1182 172	207 152 183 144	144 149 170 203 196
mber 19	Ni- trate (NO ₃ )	8.4 6.1 5.0 5.0	4.7.4.4.7.8 9.1.9.7.09	8 6 6 6 8 8 6 6 8	മല മലമ
to Septe	Fluo- ride (F)	0	44.44	ผู้ผู้ผู้ผู้	
Chemical analyses, in parts per million, water year October 1954 to September 1955	Chlo- ride (C1)	32 31 30 23 18 21	22 29 20 12 15	17 12 14 9.5	7.5 9.0 14.5
r Octob	Sul- fate (SO ₄ )	880 880 880	94 80 91 93 93	65 51 58 42	24 48
ater yea	Bicar- bonate (HCO ₃ )	76 48 52 56 67	8 2 2 2 8 8 4 2 5 8 8 8	94 172 66 66	288 34
Hon, w	Po- tas- sium (K)		8 8 7 7 8 0	1.8	11.5 11.6 1.6 1.6
s per m	So- dium (Na)	23 21 19 14 15	11 11 113 1.0 9.7	8.7 8.6 5.7	4.9 6.8 12 12
in part	Mag - ne - sum (Mg)	11. 11. 9.6 8.9 9.6	11 10 8.8 7.9 10.8	10 6.5 6.6	6.6 6.7 8.8 11
alyses,	Cal- ctum (Ca)	43 40 36 37 38	333342	28 20 83 83 84	32 38
mical a	Man- ga- nese (Mn)	0.0 10.0 10.0 10.0 10.0 10.0	88888	. 30 . 30 . 15	zi
Che	Iron (Fe)	0.00 .03 .04 .00	0.020.00.00.00.00.00.00.00.00.00.00.00.0	90. 11. 80. 80.	8.g. <b>9.g</b> .g.
	Alum- tnum (Al)	0.1	199911		नन ।।। ————
	Silica (SiO ₂ )	3.7 4.1 7.7 7.5 7.9	6.8 8.5 1.7.7 9.7	7. 9. 9. 8. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	10 7.5 7.3
	Tem- pera- ture (°F)			-	
	Mean discharge (cfs)	175, 200	137, 300 277, 800 258, 400	335, 400 339, 500 565, 200	708,500 649,200 385,000 162,300 235,100
	Date of collection	Oct. 11-10, 1954 Oct. 11-20 Oct. 21-31 Nov. 1-10 Nov. 11-20 Nov. 21-30	Dec. 1-10. Dec. 11-19 Dec. 21-31. Jan. 1-10, 1955. Jan. 11-20.	Feb. 1-10. Feb. 11-20 Feb. 21-28 Mar. 1-10	19-20. Mar. 21-31. Apr. 1-10. Apr. 11-20. Apr. 21-30.

May 11-20 May 11-20	:::	- 1	- 61 4	1 1 1				 					448		218 208	147 153 149	8 4 3	 353 347	4.4.0	<b>~</b> ∞ •	
June 1-10 June 11-20 June 21-30	111		8.000	111	228	8888	45 45 112 113 118	 113	8 - 8 - 8 - 8 - 8 - 8 - 8 - 8 - 8 - 8 -	121	82 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	18 21 21 21		F 9 8 9	222 226 280	155 163 203	228	 360 378 465	F. F. F. F. F. F. F. F. F. F. F. F. F. F	& <b>&amp;</b> 4.	
July 11-20 July 21-31	111		100	; ; ;				 						. F- 10	278 220	182 158	38.59	 373 373	4.0	. es ro	
Aug. 11-20.  Aug. 21-30.  Sort 1-10.	1111	96104		;;;			8 6 2 2	 				6040	4000	4000	229 251 272	170 179 186	5225	395 430 459	60.5.5	& <b>-</b> 1	
Sept. 11-20 Sept. 21-30	11	. 4 00		;;;										2 - 62	316 327	208 208 209	1 = =	 524	. 5	, ro es	
Time-weighted average a · · · ·	:	9	6.8	-	0	-+	41 11	15 2	2.3	88	$\vdash$		0.2	4.4	223	148	16	369	1	9	
a Represente 98 nervent of days	mount of dozen																				

age

### OHIO RIVER MAIN STEM -- Continued

### OHIO RIVER AT LOCK AND DAM 51, AT GOLCONDA, ILL. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Nonce-daily measurement at varying hours 7

Nov. Aug. Sept. Day Oct. Dec. Feb. Mar. Apr. May June July Jan. 74 51 46 45 46 44 44 44 45 45 48 65 74 79 89 75 77 80 5 46 38 50 52 67 71 81 89 44 44 42 45 44 72 71 54 40 46 55 67 84 87 53 54 54 43 45 40 58 58 72 50 76 44 41 41 14 15 38 37 64 82 54 53 42 42 83 83 75 41 19 64 64 40 48 68 69 72 74 52 52 80 41 39 40 40 40 48 49 64 64 75 77 63 40 70 85 85 23 24 25 50 84 75 39 32 27 44 44 74 43 43 45 57 56 54 77 30 37 34 85 85 - -43 Aver-

May 1-10, 1955	:	- 6	1	57.0	3.8		4.	2:	27 .	5 5	23	2 :	77.0	æ.	216	147	12		353	* .	ıc ı
May 11-20	;	7.	;	<u>.</u>	3		=	7.7	7.7	£	2	2	-	1.7	812	207	41.		202	# ·	o
May 21-31	:	8.4	1	10	8		12	12	1.9	102	28	16	-	3.5	208	149	65		347	2.6	4
								_					_	_						_	
June 1-10	;	7.3	;	8	8		12	12	1.9	113	99	18		3.7	222	155	62		360	7.7	9
June 11-20	;	6.9	1	8	8		12	13	1.7	121	9	18		3.6	226	163	64		378	7.7	9
June 21-30	;	2.0	1	8	8		16	16	1.3	138	82	77		5.8	280	203	06		465	6.7	4
July 1-10	:	6.2	;	8	8		16	18	2.2	124	8	33		5.9	281	193	91		458	9.7	<b>6</b>
July 11-20	;	5.6	;	8	8		15	21	2.6	102	901	22	_	3.7	278	182	86	_	<b>6</b>	7.4	•
July 21-31	;	7.2	:	5	8		9.7	13	2.1	113	20	20	_	5.5	220	158	65		373	7.5	ro.
		,		- ;	;	,		,	,		:		•			į	ţ				
Aug. 1-10	:	- -	:	3	3		7.7	- 13	8.7	126	200	23		4.	528	1.10	29		SAS	9.	۵
Aug. 11-20	;	2.9	!	8	8		14	16	2.5	127	62	29	_	3.3	251	179	15		430	.5	-
Aug. 21-30	;	5.0	;	5	10.		14	22	2.7	115	2	34	_	3.7	272	186	85		459	7.5	2
Sept. 1-10	;	4.0	;	5	8		16	25	8.8	101	88	88	_	2.3	288	192	104	_	487	7.4	9
Sept. 11-20	;	4.8	;	10	10.		18	21	8.3	118	102	8		2.1	316	208	111		524	-2	2
Sept. 21-30	;	3.7	;	8	8		11	29	3.1	114	108	43		2.3	327	205	111		539	2.5	~
Time-weighted average a	;	8.8	:	0.03	0.02		=	15	2.3	88	72	12		4.4	223	148	16		369	1	<b>s</b>
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### CUMBERLAND RIVER BASIN

### CUMBERLAND RIVER AT BARBOURVILLE, KY.

LOCATION.--At gaging station at bridge on State Highway 11, at Barbourville, Knox County, 0.4 mile upstream from Richland Creek.

DRAINAGE AREA.--972 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to August 1950.

Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 88°F Aug. 5; minimum, freezing point on several days during January and February.

EXTREMES, 1949-55.--Water temperatures: Maximum, 91°F June 28, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Daily water temperatures reported are averages of twice-daily measurements. The data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WSP 1386.

Temperature (°F) of water, water year October 1954 to September 1955 Twice-daily measurements at approximately 8 a.m. and 6 p.m. 7

			Twice-da	my measu	rements	at approx	imately 8	a.m. and	вр.m/			
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
,	76	50	44	46	34	49	52	60	72	78	84	78
1 2 3 4	74	46	43	47	36	50	52	64	74	80	86	76
- 5	75	43	43	48	34	48	52	66	74	80	84	
2	74	44	42	46	34	51	56	66	74	79	84	
5	75	46	42	46	36	54	55	69	75	80	86	
	74	45	40	46	38	52	58	68	76	82	85	80
6 7	68	47	38	46	42	48	55	70	72	82	84	78
8	70	46	38	42	42	46	54	70	70	80	84	76
ŝ	69	47	38 38	43	40	47	54	66	70	79	79	78
10	69	48	38	40	40	50	56	69	70	80	80	76
11	68	48	38	37	35	54	58	70	68	80	80	74
12	70	48	38	36		56	59	70	68	80	77	75
10	70	50	38	36		56	62	68	68	81	81	74
13	71	46	40	36		56	60	68	66	80	78	74
14 15	66	48	40	38	34	57	60	70	68	80	80	75
16	62	48	40	34	38	54	61	69	69	78	82	76
17	62	52	40	36	45	51	62	68	73	80	80	74
18	60	54	42	34	48	50	66	71	74	81	81	74
19	56	54	42	32	50	49	68	72	73	82	82	74
20	56	56	38	32	54	51	66	73	77	82	84	74
21	56	52	38	32	41	52	66	74	78	84	83	74
22	54	52	38	34	40	50	66	74	78	83	82	76
23	56	48	37	34	38	50	66	74	80	84	82	76
24	58	49	40	34	38	50	62	74	76	82	84	74
25	56	46	36	34	36	50	60	74	78	78	82	74
26	56	46	38	33	43	45	58	76	74	80	80	72
27	59	46	39	33	46	42	61	78	72	83	82	73
28	58	44	44	32	48	44	60	78	74	84	81	74
29	58	44	49	32		46	60	79	76	84	82	74
30	52	42	47			46	62	77	77	83	80	72
30 31	50		44			50		72		84	80	
Aver-		4.5	1	00	4.0		•		73	81	82	75
age	64	48	40	38	40	50	60	71	13	1 81	1 62	1 13

## OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.

LOCATION: --About 1,500 feet upstream from dam, lock and dam 53 (mile 962.6) near Grand Chain, Pulaski County, 7,300 feet downstream from Bledso Creek, and

29.7 miles downstream from the Tennessee River.

DRAINAGE REAL-20.3 100 square miles.

RECCHORS AVAILABLE. --Chemical analyses: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

FATEMES, 1954-55.—Dissolved solids: Maximum, 229 ppm Oct. 21-31; minimum, 128 ppm Mar. 11-20.

Barchess: Maximum, 138 ppm July 11-20; minimum, 84 ppm Mar. 11-20.

Specific conductance: Maximum daily, 527 micromhos Oct. 25; minimum daily, 182 micromhos Mar. 17.

Water temperatures: Maximum, 87-F Aug. 5; minimum, 84-F Feb. 11, 13, 18.

REMARKS.—Records of specific conductance of daily samples available in district office at Columbus, Onio. No discharge records available for this station.

	Color	8940-0	H 44 H 80 80	8 20 35 35	00 to to to 60
	D Hd	F. E. F. E. E. E. E. E. E. E. E. E. E. E. E. E.	7.7.5	621225	40,000,4
	Specific conduct- ance (micro- mhos at 25°C)	312 331 379 285 281 281	275 297 310 292 255	241 257 279 236 202 225	255 307 328 283 284
	Total acid- ity as H ₂ SO ₄				
	Non- sarbon- ate	56 57 57	45 54 54 54 54 54 54 54 54 54 54 54 54 5	85 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	847.65 C 42.48 64.48 C 44.48
	Hardness as CaCO ₃ as Calcium, Normage car	115 124 134 105 109	107 116 115 113	100 104 112 98 84	108 125 130 136 120
55	Dissolved solids (residue on evaporation at 180°C)	184 197 229 163 167	164 191 183 169 150	140 154 172 143 128	153 177 183 200 169
water year October 1954 to September 1955	Ni- trate (NO ₃ )	20.00.00.00	0.50 0.44 0.50 0.44	8.5. 9.1. 9.1. 9.1. 9.1.	4.4.4.0.0 - 6.0.4.0.0
to Septer	Fluo- ride (F)		88844	444444	46.4444
er 1954	Chlo- ride (C1)	25 28 14 18 16 16 16	22 22 118	11 12 12 9.5 6.5	8.0 13 15 12 13
r Octob	Sul- fate (SO ₄ )	52 59 59 55	3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	88 89 89 89 89	64 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
ıter yea	Bicar- bonate (HCO ₃ )	73 75 52 60 63	86 22 86 84	81 67 66 53 65	23 38 38 38 38 38
	Po- tas- sium (K)	8.8.8.2.1. 8.8.2.2.2.1.	1.3 1.3 1.3	2:1: 8:1: 8:1: 8:5:	1.3 1.6 1.8 1.8
in parts per million,	So- dium (Na)	51 51 61 110 111	11 21 11 1.0	4.0.0.4.0	6.0 9.3 8.8 8.8
in parts	Mag- ne- sium (Mg)	8.2 9.0 7.5 1.5 1.5	6.2.7.6	6.5.5.0	6.00 6.7. 6.00 6.7. 6.7. 8.7. 9.
alyses,	Cal- cium (Ca)	222222	2 2 2 2 2	27.29.33.03	38 88 83
Chemical analyses,	Man- ga- nese (Mn)	0.0 20. 20. 50. 80. 80.	22828	82.88.89.41	888888
. <del>.</del>	Iron (Fe)	0.01	22228	128:1:05	8 6 6 6 8 8
	Alum- inum (Al)	0.1	11915	977711	111111
	Silica (SiO ₂ )	6.5 6.5 6.5 6.5	6.1 4.1 7.0 6.1	5.6 6.2 6.3 6.9 6.9	8 8 7 7 8 8 7 6 4 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	Tem- pera- ture (°F)				
•	Mean T discharge p (cfs)				
	Date of collection	Oct. 1-10, 1954 Oct. 11-20 Oct. 21-31 Nov. 11-20 Nov. 21-30	Dec. 1-10 Dec. 11-20 Dec. 21-31 Jan. 1-9, 1955 Jan. 27-31	Feb. 1-10 Feb. 11-20 Feb. 21-28 Mar. 1-10 Mar. 11-20 Mar. 21-31	Apr. 1-10 4pr. 11-20 Apr. 21-30 May 1-10 May 11-20 May 21-31

OHIO RIVER MAIN STEM -- Continued

OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL .-- Continued

		Color	4	~	<b>س</b>	ro	4	-	ıc	87	-	4	က	~	9
		Hd	7.8	7.8	6.7	7.4	7.4	7.5	7.3	7.5	7.4	7.3	7.5	4.7	:
	Specific conduct-	ance (micro- mhos at 25°C)	250	308	296	302	352	292	266	588	315	263	257	298	286
	Total	ity as													
	sss O	Non- carbon- ate	30	#	33	47	8	4	36	49	47	34	33	45	20
	Hardness as CaCO,	Calcium, mag- nesium	106	131	126	124	138	122	114	134	127	104	102	115	115
water year October 1954 to September 1955 Continued	Dissolved	(residue on evap- oration at 180°C)	147	182	175	173	202	170	154	177	181	152	151	171	170
1955C	Ni-	trate (NO ₃ )	2.6	3.2	3.6	2.5	2.5	3.2	2.7	2.3	2.2	بم	1.0	1.3	3.2
ptember	Fluo-	ride (F)	0.2	۳.	~!	~!	~?	~.	8	4.	~!	2,	٣.	.3	0.2
54 to Se	Chlo-	ride (C1)	9	13	=	14	19	14	14	16	18	16	12	18	15
ober 19		fate (SO ₄ )	32	45	41	48	99	42	31	æ	43	34	3	46	49
ear Oct	Bicar-	bonate (HCO ₃ )	93	106	106	94	91	92	95	104	86	98	84	98	61
water 3	Po-	Sium (K)	1.7	2.2	1.3	1.6	1.9	1.9	2.0	1.8	2.1	9.8	1.7	2.2	1.9
Chemical analyses, in parts per million,	So-	dium (Na)	6.9	8.6	8.4	8.8	14	8.6	8,6	2	13	=	=	13	10
ırts per	Mag-	sium (Mg)	7.9	8.6	8.7	8.8	9.4	8.4	7.1	10	8.4	7.2	7.2	8.8	7.9
s, in pa	Cal-	chum (Ca)	29	8	8	8	4	35	34	8	33	8	53	35	33
analyse	Man-	esanese (Mn)	9.0	8	8	8.	8	8	00	8	10.	8	10.	8	0.03
hemica	Iron	(Fe)	0.00	8	8	10.	5	.03	10	8	.03	.03	8	8.	0.03
٥	Alum-	inum (A1)	:	:	;	;	;	;	;	:	;	ł	;	!	
	Silica	(SiO ₂ )	6.6	7.3	9.0	3.3	5. 5.	6.5	8	2.3	3.8	6.4	7.4	3.9	6.1
	Tem-	ture (°F)										_			
	Mean	discharge to (cfs) (													
		Date of collection	June 1-10, 1955	June 11-20	June 21-30	July 1-10	July 11-20	July 21-31	Aug. 1-10	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Time-weighted average a

a Represents 95 percent of days.

### OHIO RIVER MAIN STEM

### OHIO RIVER MAIN STEM--Continued

### OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Once-daily measurement at approximately 7:30 a.m. 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
-1	76	55	48	46	37	44	45	65	74	76	83	81
2	75	52	47	43	38	45	48	65	74	78	83	81
3	75	53	47	43	36	45	49	65	75	78	87	81
4	75	53	46	45	37	46	49	67	74	81	83	80
5	76	56	47	45	36	46	51	67	75	81	87	80
		•										l
6	75	54	43	45	39	46	52	68	74	82	85	80
7	71	51	43	44	36	45	50	68	74	82	83	80
8	71	55	44	43	38	46	54	72	72	84	84	80
9	72	52	44	46	39	47	54	69	71	84	84	82
10	72	51	43	44		48	54	69	70	80	85	80
11	72	52	44		34	49	55	68	70	82	84	80
12	72	52	44	44	35	51	55	69	71	79	83	77
13	71	54	43	40	34	54	56	68	68	80	83	76
14	72	54	43	40	37	52	58	66		80	82	76
15	69	53	43	40	36	52	60	66	69	84	82	76
			}	}				ļ	l	ļ		l
16	65	54	42	40	38	52	60	67	70		80	78
17	65	54	43	41	36	50	62	68	70	80	82	78
18	64	54	41	40	34	50	64	68	71	81	82	78
19	63	55	40	40	38	48	64	68	70	82	83	78
20	62	53	40	40	38	48	64	70	71	83	84	78
21	61	53	38	40	36	50	64	71	72	84	83	80
22	62	53 52	40	39	38	50	65	72	74	82	85	80
23	64	51	40	39	38	48	65	71	74	82	84	78
24	63	51	40		40	48	65	71	74	83	82	77
25	62	50	38	38	38	48	64	73	74	83	84	76
	02	30	36	30	30	46	04	(3	14	03	04	10
26	61	48	40	40	38	46	64	74	74	84	84	76
27	62	48	42	38	42	45	62	74	78	84	84	78
28	58	49	42	37	42		63	75	80	82	83	75
29	56	48	42	37		45	63	76	75	83	84	77
30 31	56	48	38	36		46	63	71	76	83	83	76
31	55		_44	36_		46		71	<u></u>	83	83	
Aver-									7			
age	67	52	43	41	37	48	58	69	73	82	84	78

### OHIO RIVER MAIN STEM--Continued

### OHIO RIVER AT METROPOLIS, ILL.

LOCATION: --Temperature recorder at gaging station at Paducah & Illinois Railroad bridge at Metropolis, Massac County, 9‡ miles downstream from Tembessee River, and 37 miles upstream from mouth.

DRAINAGE AREA.-203, 000 square miles, approximately.

RECORDS AVAILABLE.-Chemical analyses: October 1952 to September 1953.

RECORDS AVAILABLE.-Chemical analyses: October 1952 to September 1955.

EXTREMES: 1954-55.-Water temperatures: Maximum, 88 F Aug. 3-6 1955; minimum, 36 F on several days during January and February 1955.

REMRINS.-Flow regulated by many dams and reservoirs. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

REVISIONS.-Flow regulated by many dams and reservoirs. Records of discharge for water year October 1954 to September 1955 given in WSP 1385.

(°F) of water Min Temperature 56 Max 64 Apr. 12 Apr. 17 Apr. 23 Date Min 544 Max 32 Date Mar. tor

Min

Max 28 28

Min

Max 64 64 72

Date

20 Date

June Aug.

8 238

June Apr. May

Temperature (°F) of water, water year October 1954 to September 1955 82°F minimum for August, Average

26.	62	- 19	49	49	41	41	400	39	40	39	27	20	_	- 24	74	73	_	- 44	_		_		_	7.7
27	19	8	49	48	41	41	39	39	41	4	8	48	64	64	74	74	-	_		85	84	84	12	11
28	9	28	48	48	4	#	39	38	42	#	48	41	_	84	74	74	-	_	_			_		16
29	28	26	48	48	7	4	38	37	-;	-	4	42	-	84	74	7	-	_			_	_	_	16
30	26	22	48	47	42	7	37	31	:	;	42	4	-	84	74	13	_	- 82	_	_				77
31	22	54	;	;	42	42	37	36	;	:	48	4.1		 !	73	73		_	_	_	-	_	-	
Average	63	99	20	8	43	42	42	7	37	37	49	64	58	58	69	69	74	14	84	83	85	85	80	18

### CUMBERLAND RIVER BASIN--Continued

### Ž CUMBERLAND RIVER AT WILLIAMSBURG,

station at bridge on State Highway 92, at Williamsburg, Whitley County, and 2.1 miles downstream from Clear Fork DRAINAGE AREA. -- 1,673 square miles.

October 1951 to September 1955. RECORDS AVAILABLE. --Chemical analyses: October 1951 t Water temperatures: October 1951 to September 1955.

August, and September 1955. Sediment loads (1953-55): Maximum daily, 68,100 tons Mar. 23, 1955; minimum daily, less than 0.5 ton on many days during October to December 1953

Records of discharge for water year October January, July to November 1954, June, August and September 1955. REMARKS. --Records of specific conductance of daily samples available in district office at Columbus, Ohio. 1954 to September 1955 given in WSP 1386.

۱			i															
		Color	2	<b>∞</b>	-	4	<b>∞</b>	12	12	8	ω	18	28	22	<b>~</b>	2	က	ន
		H _d	7.8	8.1	7.8	7.7	7.7	7.6	7.4	7.4	7.4	7.1	7.0	7.0	7.2	7.3	2.0	8.8
	Specific conduct-	ance (micro- mhos at 25°C)	400	387	406	404	476	381	236	177	138	92.6	87.1	129	166	150	158	89.3
	ress CO,	Non- carbon- ate	2	17	0	0	9	က	17	ន	22	91	11	32	24	19	81	13
	Hardness as CaCO,	Calcium, mag- nesium	98	92	92	87	104	88	64	24	43	20	8	47	49	44	44	83
	Dissolved solids	(residue on evap- oration at 180°C)	242	240	245	238	281	223	142	109	06	99	55	82	104	98	96	61
er 1955		(NO ₃ )	0.2	4.	e.	67	=:	4.	2.0	3.7	3.3	2.5	3.7	9.0	3.4	1.7	3.9	2.0
o Septemb	:	Fluoride (F)	0.2	٦.	7.	87	2.	7.	?	<u>د</u> .	8.	٥.	~!	٦.	٦.	٦.	٦.	~:
Chemical analyses, in parts per million, water year October 1954 to September 1955	:	Chloride (C1)	11	12	11	12	16	12	0.9	9.0	4.2	2.5	2.5	4.2	4.2	0.4	4.0	1.2
er year Oc	;	Suitate (SO ₄ )	46	97	94	88	108	81	92	42	33	20	19	35	44	37	38	77
Illon, wat	Bicar-	bonate (HCO ₃ )	104	96	113	115	121	104	26	38	26	16	16	2,0	31	30	32	17
arts per m	Potas-	Sium (K)	3.3	8.6	3.5	3.5	3.7	3.5	2.3	1.9	1.2	1.5	1.5	1.5	1.6	1.3	1.3	<b>1</b> .8
lyses, in p	;	Sodium (Na)	48	42	49	49	28	44	22	14	7.9	4.1	3.4	7.3	12	=	12	4.1
mical ana	Мад-	nestum (Mg)	11	8.6	9.3	9.1	11	8.6	6.3	5.2	4.4	3.5	1.6	5.1	4.8	4.8	4.7	2.9
ဗီ	Cal-	cium (Ca)	20	22	21	20	24	21	12	13	10	6.1	9.3	Ξ	12	9.7	8.6	6.2
		(Fe)	0.03	70.	<b>7</b> 0.	<b>.</b> 0	89	90.	.07	60.	80.	90.	90.	60.	.03	10.	.12	60.
	į	(SiO ₂ )	4.0	5.3	2.5	0.9	3.4	4.5	5.6	7.0	6.5	5.0	5.5	9.3	5.7	6.6	5.7	6.1
	Mean	discharge (cfs)	110							2, 232	2,875	21,700	13,750	3,450	1,654	1,647	2, 739	13,000
		Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-24	Nov. 25-Dec. 5	Dec. 6-12	Dec. 13-18	Dec. 19-29	Dec. 30-31	Jan. 1-2, 1955	Jan. 3-5	Jan. 6-18	Jan. 19-31	Feb. 1-6	Feb. 7-10

## CUMBERLAND RIVER BASIN--Continued

# CUMBERLAND RIVER AT WILLIAMSBURG, KY. -- Continued

Color 띮 Specific conduct-ance (micro-mhos at 25°C) 153 201 201 156 139 172 172 172 203 203 281 Calcium, Non-mag- carbon-Hardness as CaCO, mag-nesium 48 46 46 40 40 40 40 40 40 on evap-oration at 180°C) solids (residue 85 62 63 64 64 92 94 94 83 83 83 68 68 207 159 159 173 173 175 182 20 Chemical analyses, in parts per million, water year October 1954 to September 1955 -- Continued Nitrate (NO₃) Fluoride (F) Chloride (C1) Sulfate (SO₄) 2444444 Bicar-bonate (HCO₃) 2 28 33 33 42 42 43 43 44 48 90 90 90 90 90 90 90 Potas-sium (K) Sodium (Na) 74 Mag-nesium (Mg) 6.8 Cium (Ca) 0.05 Fron (Fe) 94122188 Silica (SiO₂) Mean discharge (cfs) 3,756 5,430 113,950 110,970 113,120 5,347 5,347 26,150 22,150 5,648 2,592 3,610 2,907 3,476 3,194 535 353 341 341 385 389 399 39. 39. 634 Feb. 11-20, 1955 ...
Feb. 24-Mar. 4.
Mar. 5-7
Mar. 8-10
Mar. 11-16
Mar. 21-26 Apr. 1-8 Apr. 9-16 Apr. 23-27 Apr. 28-May 4 May 5-10 May 11-26 May 27-June 15
June 16-30
July 16-19
July 16-19
July 16-19
July 20-Aug. 4
Aug. 14-Sept. 3
Sept. 4-18
Sept. 19-30 Mar. 27-31 .... Date of collection Time-weighted

## CUMBERLAND RIVER BASIN--Continued

CUMBERLAND RIVER AT WILLIAMSBURG, KY. --Continued
Temperature (*P) of water, water year October 1954 to September 1955
Wenice-daily measurements at annoximately 7:30 a.m. and 5:30 p.m. 7

																																	ı	ı
	mber	p.m.	80	2	81	83	82	82	81	82	81	83	42	43	43	8	81	81	81	81	8	8	80	£	۲ ا ا	= 1	92	92	1.1	9.	9 1	<u>.</u> .	:	8
	September	a.m.	11	7.	74	72	E	92	92	22	92	92	7.7	22	73	74	73	74	73	73	73	7.1	73	74	2	9	74	72	73	4	2	22	١	74
	ust	p.m	88	88	68	68	68	68	68	98	98	<b>2</b>	8	8	82	81	81	83	84	84	98	8.1	84	84	<b>2</b>	84	84	82	82	82	98	82	3	82
	August	a.m.	83	83	83	84	2,	82	82	84	83	84	81	62	48	77	7.2	48	79	80	81	83	83	81	81	2	79	48	43	29	49	2 2	2	8 1
	ly.	p.m.	82	84	82	82	83	83	83	81	82	82	84	83	82	82	81	83	85	82	82	98	87	81	84	84	98	98	88	82	98	2 28	70	82
	July	a.m.	94	77	80	8	83	64	81	81	43	-29	81	81	8	81	80	43	80	8	81	82	81	82	82	8	81	83	83	84	82	800	3	81
	ie.	p.m.	92	2.2	22	48	79	48	12	2	72	2	72	2	89	2	72	74	92	77	1.1	8	83	82	23	. 8	18	80	48	8	90	81	:	16
	June	a.m.	10	72	72	72	74	92	75	71	89	20	89	67	29	99	67	89	69	12	74	74	77	18	1	92	2.2	75	75	74	12	7.2	:	72
,	,y	p.m.	64	65	89	2	28	29	22	26	22	28	29	62	19	19	62	61	72	74	74	12	92	16	9	75	18	78	8	81	8	6, 5	9	69
5:30 p.m.	May	a.m.	29	61	62	65	22	99	26	54	53	53	28	28	5	09	28	29	89	89	20	7	72	73	23	74	73	74	92	92	92	74	=	65
and	11	p.m.	25	25	22	24	88	29	22	26	22	28	29	62	- 61	- 61	62	61	62	65	98	8	67	69	8	99	8	8	29	8	09	62	:	61
30 a.m.	April	a.m.	47	20	21	25	55	99	26	54	53	53	28	28	19	9	29	29	9	62	2	65	99	65	65	99	2	9	22	28	22	28	:	28
itely 7:	ch.	p.m.	52	5	24	54	22	55	21	47	48	20	54	26	26	28	28	28	53	54	20	21	53	53	53	25	53	20	46	45	46	8 6	2	25
proxim	March	a.m.	20	5	25	22	53	22	2	47	46	48	51	54	22	54	26	22	53	53	20	20	51	53	20	င္တ	20	20	46	43	43	4:	9	20
is at ap	ary	p.m.	39	æ	40	40	40	40	4	42	43	43	42	39	36	32	37	38	41	42	45	46	47	41	47	4	4	46	47	20	!	ł	:	43
remen	February	a.m.	35	38	37	37	68	39	41	43	42	42	41	38	32	34	33	36	38	g	42	43	45	46	46	45	\$	45	45	48	1	:	:	41
Twice-daily measurements at approximately 7:30	ary	p.m.	48	46	47	48	20	51	22	48	47	45	44	43	41	4	41	9	40	40	38	88	88	39	9	33	68	40	8	38	37	36	36	42
ce-dail	January	а.ш.	46	45	45	47	48	20	48	47	47	45	43	42	41	39	38	88	37	37	36	8	36	36	34	36	37	37	37	36	32	32	eg S	40
Ž,	per	p.m.	45	44	43	43	44	41	41	38	4	68	40	38	40	41	41	42	42	43	42	41	4	98	<del>2</del>	40	40	9	42	44	20	64	84	42
	December	a.m.	43	43	42	9	43	40	88	37	39	37	37	37	38	39	40	40	40	41	42	41	39	38	37	88	98	37	38	42	46	48	47	40
	per	p.m.	20	46	44	4	45	47	47	47	2	20	20	2	25	22	25	24	22	26	26	25	51	20	49	48	46	46	45	44	45	4	:	49
	November	a.m.	48	46	43	43	43	43	43	45	46	47	46	41	47	48	48	20	52	23	22	22	21	49	48	48	46	45	44	4	<b>5</b>	4	:	47
	Jer.	-	92	74	74	92	18	74	69	99	67	70	71	73	22	74	67	63	62	62	29	28	;	;	;	09	19	62	62	62	28	23	20	99
	Octobe	а.ш.	73	73	7.5	72	4.	75	89	49	49	64	65	88	2	2	69	62	20	8	24	22	54	54	54	22	25	22	09	29	29	25	20	63
		(g)	1	2	3	4	5.	6.	7.	8		10	11	12	13.	14	15	16	17.	18.	19	20	21	22.	23	24.	25	26	27.	28	29	30	31	Average

### CUMBERLAND AND TENNESSEE RIVER BASINS

### CUMBERLAND RIVER BASIN--Continued

### CUMBERLAND RIVER AT WILLIAMSBURG, KY . -- Continued

Suspended sediment, water year October 1954 to September 1955

$\overline{}$			nded sedim	ent, water ye	ar October	Tana in pehie	miner 1999		
		October		il	November			December	
		Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean	Mean		Mean	Mean		Mean	Mean	T
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
			415				070		
1	67	2	(t)	57	1		670	34	62
2	160	2	1	65	1	il i	595	12	19 5
3	256	5	3	71	1	[]	470	4	
4	155	10	4	86	1		368	3	3
5	113	17	5	90	1	(t) (	334	[ 2	2
_				1					
6	100	16	4	93	1		1,000	42	s 144
7	84	10	2	98	1		1,250	73	246
8	65	8	1	106	1	ן	1,010	25	68
9	55	8	1	110	2	1	912	12	30
10	49	4	1	106	3	1	1,060	11	31
3			ŀ						
11	44	2	n ·	100	3	a1	1,150	12	37
12	38	3	ll	90	3	1	1,120	17	51
13	33	4	(t)	82	3	ī	1 1.290	18	63
14	30	2	ע	75	3	ī	1,930	37	193
15	86	15	3	69	2	(t) -	2,600	59	414
		^*	l "	l	_	۱۳/	-, -, -, -, -, -, -, -, -, -, -, -, -,	"	
16	263	12	8	69	3	1	2,260	45	274
17	185	20	10	71	3	i	1,630	24	106
18	129	30	10	84	3	1 1	3,680	69	s 872
10	98	22	6	106	2	1 1	7,410	2'3	4, 260
19	80							152	2 160
20	80	12	2	124	3	1	5,270	192	2,160
,	65	7	1	910	4	2	2,900	42	329
21	64	5		218 252	2	1	1,920	23	119
22	60	4	a1		3	2	1,840	10	39
23			1	298			1,440		
24	55	3	ł\	294	5	4	1,170	3	9
25	49	2		263	5	4	1,010	2	5
1	4-	١ .	ti i		_			١ .	-
26	45	2		238	5	3	906	2	a 5
27	41	2	} (t)	210	4	2	816	2	a 4
28 [	40	1	ll .	214	4	2	828	22	s 61
29	40	1		505	36	s61	7,950	2.12	s 5, 980
30	42	1	))	756	53	108	20,800	5 5	28,900
31	49	1	V i				22,600	540	33,000
Total.	2,640		67	5,000		202	98,349	-	77,491
$\longrightarrow$		January		1	February			March	
1	17,400	232	10,900	993	5	13	14,200	298	11,400
2	10, 100	53	s1,530	1,160	7	22	18,700	2^8	11,000
3	3, 420	35	323	2,270	25	153	18,000	207	10, 100
4	2, 190	24	142	4,080	51	562	14,300	77	2.970
5	1,740	15	70	3,520	55	523	7,820	50	1,060
Į.		1					1		-
6	1,620	12	52		99				
7 }	1.650			4,410	20	s1,440	8,900	3.16	s8,980
8		12	53	4, 410 13, 300	436	s1,440 s15,000	8,900 16,200	372	s 8, 980 16, 300
9	1,660	11	53 49	13,300 16,700	436 480	815,000 21,600	16,200 17,100	372 427	16,300 21,600
	1,630	11 10	53 49 44	13,300 16,700 14,300	436 480 145	815,000 21,600 85,770	16,200 17,100 14,600	372 427 101	16,300 21,600 3,980
10	1,660 1,630 1,550	11	53 49	13,300 16,700	436 480	815,000 21,600	16,200 17,100 14,600	372 427	16,300 21,600
10	1,630 1,550	11 10 12	53 49 44 50	13, 300 16, 700 14, 300 7, 700	436 480 145 42	815,000 21,600 85,770 882	16,200 17,100 14,600 7,660	372 4/37 101 36	16,300 21,600 3,980 744
11	1,630 1,550 1,510	11 10 12	53 49 44 50	13, 300 16, 700 14, 300 7, 700 4, 290	436 480 145 42	\$15,000 21,600 \$5,770 882	16,200 17,100 14,600 7,660 4,220	372 427 101 36	16,300 21,600 3,980 744
10 11 12	1,630 1,550 1,510 1,720	11 10 12 12 11	53 49 44 50 49 51	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930	436 480 145 42 33 28	\$15,000 21,600 \$5,770 882 382 297	16,200 17,100 14,600 7,660 4,220 3,830	372 487 101 36 31 78	16, 300 21, 600 3, 980 744 353 807
10 11 12	1,630 1,550 1,510 1,720	11 10 12	53 49 44 50	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930	436 480 145 42	\$15,000 21,600 \$5,770 882	16,200 17,100 14,600 7,660 4,220 3,830	372 427 101 36	16,300 21,600 3,980 744
10	1,630 1,550 1,510 1,720 1,950 2,000	11 10 12 12 11 13 14	53 49 44 50 49 51	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920	436 480 145 42 33 28	\$15,000 21,600 \$5,770 882 382 297	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830	372 487 101 36 31 78 105 38	16, 300 21, 600 3, 980 744 353 807 1, 260 393
10	1,630 1,550 1,510 1,720 1,950	11 10 12 12 11 13	53 49 44 50 49 51 68	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310	436 480 145 42 33 28 25	\$15,000 21,600 \$5,770 882 382 297 223	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830	372 427 101 36 31 78 105	16, 300 21, 600 3, 980 744 353 807 1, 260
11	1,630 1,550 1,510 1,720 1,950 2,000 1,810	11 10 12 12 11 13 14 15	53 49 44 50 49 51 68 76	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920	436 480 145 42 33 28 25	\$15,000 21,600 \$5,770 882 382 297 223 126 119	16,200 17,100 14,600 7,660 4,220 3,830 4,460 3,830 3,740	372 427 101 36 31 78 105 38 84	16,300 21,600 3,980 744 353 807 1,260 393 s 904
11	1,630 1,550 1,510 1,720 1,950 2,000 1,810	11 10 12 12 11 13 14	53 49 44 50 49 51 68 76	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000	436 480 145 42 33 28 25	\$15,000 21,600 \$5,770 882 382 297 223 126	16,200 17,100 14,600 7,660 4,220 3,830 4,460 3,830 3,740	372 487 101 36 31 78 105 38	16,300 21,600 3,980 744 353 807 1,260 393 s 904
10 11 12 13 14 15	1,630 1,550 1,510 1,720 1,950 2,000 1,810	11 10 12 12 11 13 14 15	53 49 44 50 49 51 68 76 73	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000	436 480 145 42 33 28 25 16 15	\$15,000 21,600 \$5,770 882 382 297 223 126 119	16,200 17,100 14,600 7,660 4,220 3,830 4,460 3,830 3,740	372 427 101 36 31 78 105 38 84 404 625	16, 300 21, 600 3, 980 744 353 807 1, 260 393 \$904 \$14, 100 42, 400
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470	11 10 12 12 11 13 14 15	53 49 44 50 49 51 68 76 73	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370	436 480 145 42 33 28 25 16	\$15,000 21,600 \$5,770 882 382 297 223 126 119	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740	372 427 101 36 31 78 105 38 84 474 625	16, 300 21, 600 3, 980 744 353 807 1, 260 393 \$904 \$14, 100 42, 400
11	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300	11 10 12 12 11 13 14 15 12 12	53 49 44 50 49 51 68 76 73 53 48 39	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 370 4, 490	436 480 145 42 33 28 25 16 15	\$15,000 21,600 \$5,770 882 382 297 223 126 119 122 164 364	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 900 22, 900 25, 500	372 427 101 36 31 78 105 38 84 474 625	16,300 21,600 3,980 744 353 807 1,260 393 s 904 s 14,100 42,400 31,000
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210	11 10 12 12 11 13 14 15 12 12 12 11	53 49 44 50 49 51 68 76 73 53 48 39	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100	436 480 145 42 33 28 25 16 15 18	\$15,000 21,600 \$5,770 \$82 382 297 223 126 119 122 164 364 592	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 29, 500	372 4177 101 36 31 78 105 38 84 404 615 470 279	16,300 21,600 3,980 744 353 807 1,260 393 8904 814,100 42,400 31,000 20,200
11	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300	11 10 12 12 11 13 14 15 12 12	53 49 44 50 49 51 68 76 73 53 48 39	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 370 4, 490	436 480 145 42 33 28 25 16 15	\$15,000 21,600 \$5,770 882 382 297 223 126 119 122 164 364	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 900 22, 900 25, 500	372 427 101 36 31 78 105 38 84 474 625	16,300 21,600 3,980 744 353 807 1,260 393 s 904 s 14,100 42,400 31,000
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180	11 10 12 12 11 13 14 15 12 12 12 11	53 49 44 50 49 51 68 76 73 53 48 39 33 19	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210	436 480 145 42 33 28 25 16 15 18 30 43 28	\$15,000 21,600 \$5,770 882 382 297 223 126 119 122 164 364 592 318	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 29, 500 26, 700	372 4177 101 36 31 78 105 38 84 404 615 470 279	16,300 21,600 3,980 744 353 807 1,280 393 s 904 s 14,100 42,400 31,000 20,200 14,000
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180	11 10 12 12 11 13 14 15 12 12 11 10 6	53 49 44 50 49 51 68 76 73 53 48 39 33 19	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 4, 210 3, 330	436 480 145 42 33 28 25 16 15 18 30 43 28	\$15,000 \$1,600 \$5,770 \$82 287 223 126 119 122 164 364 592 318	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600	372 4177 101 36 31 78 105 38 84 474 615 479 279 195	16, 300 21, 800 3, 980 744 353 807 1, 280 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180	11 10 12 12 11 13 14 15 12 12 11 10 6	53 49 44 50 49 51 68 76 73 48 39 33 19 6	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 3, 430	436 480 145 42 33 28 25 16 15 18 30 43 28	\$15,000 21,600 \$5,770 \$5,770 \$882 382 297 223 126 119 122 164 364 592 318 171 \$366	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600	372 4177 101 36 31 78 105 38 84 414 675 470 279 195	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180	11 10 12 12 11 13 14 15 12 12 12 11 10 6	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 4, 210 3, 330 9, 530	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37	\$15,000 \$1,600 \$5,770 \$882 382 297 223 126 119 122 164 364 364 592 318 171 \$366 \$4,980	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600	372 4177 36 31 78 105 38 404 615 427 195 100 474 875	16, 300 21, 800 3, 980 744 353 807 1, 280 393 s 904 s 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000 68, 100
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180 1,100 1,350 2,390 2,900	11 10 12 12 11 13 14 15 12 12 11 10 6	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6 33 155	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 4, 490 5, 100 4, 210 3, 330 3, 330 3, 330 16, 100	436 480 145 42 33 28 25 16 15 18 30 43 28 175 175 375	\$15,000 \$1,600 \$5,770 882 297 223 126 119 122 164 592 318 171 \$366 \$4,980 14,600	16, 200 17, 100 14, 600 7, 680 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 29, 500 26, 700 22, 200 26, 600 29, 500 25, 500 25, 500 26, 600 27, 600 28, 500	372 417 101 36 31 78 105 38 84 474 615 229 195 100 474 875 375	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 68, 100 27, 100
10	1,630 1,550 1,510 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,180	11 10 12 12 11 13 14 15 12 12 12 11 10 6	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 4, 210 3, 330 9, 530	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37	\$15,000 \$1,600 \$5,770 \$882 382 297 223 126 119 122 164 364 364 592 318 171 \$366 \$4,980	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600	372 4177 36 31 78 105 38 404 615 427 195 100 474 875	16, 300 21, 800 3, 980 744 353 807 1, 280 393 s 904 s 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000 68, 100
10	1,630 1,550 1,720 1,950 2,000 1,810 1,470 1,300 1,180 1,100 1,180 1,100 1,350 2,900 2,520	11 10 12 12 11 13 14 15 12 12 11 10 6	53 44 50 44 51 68 76 73 53 48 33 15 6 33 158 188 102	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 4, 210 4, 490 5, 100 4, 210 3, 330 9, 530 16, 100 15, 100	436 480 145 42 33 28 25 16 15 15 18 33 28 27 17 17 17 17 17 17 17 17 17 17 17 17 17	\$15,000 \$1,600 \$5,770 882 297 223 119 126 119 122 164 592 318 171 \$366 \$4,980 14,600 10,100	16, 200 17, 100 14, 600 7, 680 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600 29, 500 21, 200 21, 200	372 477 101 36 31 78 105 38 84 474 675 279 195 100 474 875 375	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000 68, 100 27, 100 10, 900
10	1,630 1,550 1,720 1,950 2,000 1,810 1,630 1,470 1,300 1,210 1,100 1,350 2,390 2,520 2,000	11 10 12 12 11 13 14 15 12 12 11 10 6	53 44 50 44 51 68 76 73 53 48 39 33 19 6 33 156 188 102	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 9, 530 16, 100 15, 100 9, 890	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 335 248	\$15,000 \$21,600 \$5,770 882 382 297 223 126 119 122 164 364 592 318 171 \$366 \$4,600 10,100	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 29, 500 26, 700 22, 200 26, 600 29, 500 21, 200 15, 000	372 4\77 101 36 31 78 105 38 84 4\74 6\75 4\74 8\75 3\75 191	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 14, 000 5, 990 34, 000 68, 100 27, 100 10, 900
10	1,630 1,550 1,720 1,720 2,000 1,810 1,630 1,470 1,300 1,210 1,100 1,300 2,900 2,520 2,000 1,610	11 10 12 12 11 13 14 15 12 12 11 10 6 2 9 24 24 15	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6 33 165 188 102 43	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 4, 490 5, 100 4, 210 3, 330 9, 530 16, 100 15, 100 9, 890 6, 360	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 335 248	\$15,000 \$1,600 \$5,770 882 382 297 223 119 122 164 364 592 318 171 \$364 592 318 171 \$365 \$4,600 10,100	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600 29, 500 21, 200 21, 200 25, 400 21, 200 8, 660	372 417 101 36 31 78 105 84 474 615 229 195 100 474 815 191	16, 300 21, 600 3, 980 744 353 807 1, 280 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 68, 100 27, 100 10, 900 5, 980 3, 100 27, 100 10, 900
10	1,630 1,550 1,720 1,950 2,000 1,810 1,630 1,300 1,210 1,350 2,390 2,390 2,520 2,000 1,430	11 10 12 12 11 13 14 15 12 12 11 10 6 2 9 24 15	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6 33 165 188 102 43 30 27	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 9, 530 16, 100 15, 100 9, 890	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 335 248	\$15,000 \$21,600 \$5,770 882 382 297 223 126 119 122 164 364 592 318 171 \$366 \$4,600 10,100	16, 200 17, 100 14, 600 7, 680 4, 220 3, 830 4, 460 3, 830 3, 740  12, 000 22, 900 25, 500 29, 500 26, 700 22, 200 26, 600 29, 500 21, 200 15, 000 8, 660 6, 790	372 4\77 101 36 31 78 105 38 84 4\74 6\75 2\79 195 100 4\74 8\75 3\75 191 124 135 22	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000 68, 100 27, 100 10, 900 5, 020 3, 160 953
10	1,630 1,550 1,720 1,720 1,930 1,810 1,630 1,470 1,300 1,180 1,100 1,350 2,900 2,520 2,000 1,610 1,4330	11 10 12 12 11 13 14 15 12 11 10 6 2 9 24 24 15	53 49 44 50 49 51 68 76 73 53 48 39 33 19 6 31 155 188 102 43 30 27 25	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 16, 100 15, 100 9, 530 16, 100 9, 890 6, 360 12, 900	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 337 175 3248	\$15,000 \$1,600 \$5,770 \$82 382 297 223 119 126 119 122 164 364 592 318 171 \$366 \$4,980 14,600 10,100 1,340 944 7,700	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 22, 200 26, 600 29, 500 25, 400 21, 200 15, 000 8, 660 6, 790 5, 340	372 4\77 101 36 31 78 105 38 4\74 6\75 4\79 195 100 4\74 8\75 3\75 191 124 135 237	16, 300 21, 600 3, 980 744 353 807 1, 280 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 5, 990 34, 000 68, 100 27, 100 10, 900 5, 020 3, 160 953 533
10	1,630 1,550 1,720 1,950 2,000 1,810 1,630 1,300 1,210 1,350 2,990 2,520 2,000 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430	11 10 12 12 11 13 14 15 12 12 11 10 6 6 2 9 24 24 24 15	53 44 50 44 51 68 76 73 53 48 33 19 6 33 156 188 102 43 30 27 27 25 20	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 4, 490 5, 100 4, 210 3, 330 9, 530 16, 100 15, 100 9, 890 6, 360	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 335 248	\$15,000 \$1,600 \$5,770 882 382 297 223 119 122 164 364 592 318 171 \$364 592 318 171 \$365 \$4,600 10,100	16, 200 17, 100 14, 600 7, 680 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 26, 600 29, 500 21, 200 21, 200 15, 000 8, 660 6, 790 5, 340 4, 160	372 417 101 36 31 78 105 38 84 474 615 474 615 100 474 815 191 124 135 52 37	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 68, 100 27, 100 10, 900 5, 020 3, 160 953 533 270
10	1,630 1,550 1,720 1,950 2,000 1,810 1,630 1,300 1,210 1,100 1,350 2,390 2,900 2,520 2,000 1,610 1,330 1,330 1,330 1,330 1,330 1,330	11 10 12 12 11 13 14 15 12 11 10 6 2 9 24 24 15	53 44 50 44 51 68 76 73 53 48 39 33 19 6 33 156 188 102 43 30 27 25 20 15	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 3, 430 9, 530 16, 100 15, 100 9, 890 6, 360 12, 900	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 337 175 3248	\$15,000 \$21,600 \$5,770 882 297 223 126 119 122 164 364 592 318 171 \$366 \$4,980 14,600 10,100 1,340 944 7,700	16, 200 17, 100 14, 600 7, 660 4, 220 3, 830 4, 460 3, 830 3, 740  12, 000 22, 900 25, 500 26, 700 22, 200 26, 600 29, 500 21, 200 15, 000 8, 660 6, 790 5, 340 4, 160 3, 290	372 4\77 101 36 31 78 105 38 4\74 6\75 4\79 195 100 4\74 8\75 3\75 191 124 135 237	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904  8 14, 100 42, 400 31, 000 14, 000 15, 990 34, 000 68, 100 27, 100 10, 900 5, 020 3, 160 953 533 270 186
10	1,630 1,550 1,720 1,950 2,000 1,810 1,630 1,300 1,210 1,350 2,990 2,520 2,000 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430 1,430	11 10 12 12 11 13 14 15 12 12 11 10 6 6 2 9 24 24 24 15	53 44 50 44 51 68 76 73 53 48 33 19 6 33 156 188 102 43 30 27 27 25 20	13, 300 16, 700 14, 300 7, 700 4, 290 3, 930 3, 310 2, 920 2, 940 3, 000 3, 370 4, 490 5, 100 4, 210 3, 330 16, 100 15, 100 9, 530 16, 100 9, 890 6, 360 12, 900	436 480 145 42 33 28 25 16 15 15 18 30 43 28 19 37 175 337 175 3248	\$15,000 \$1,600 \$5,770 \$82 382 297 223 119 126 119 122 164 364 592 318 171 \$366 \$4,980 14,600 10,100 1,340 944 7,700	16, 200 17, 100 14, 600 7, 680 4, 220 3, 830 4, 460 3, 830 3, 740 12, 000 22, 900 25, 500 26, 700 26, 600 29, 500 21, 200 21, 200 15, 000 8, 660 6, 790 5, 340 4, 160	372 417 101 36 31 78 105 38 84 474 615 474 615 100 474 815 191 124 135 52 37	16, 300 21, 600 3, 980 744 353 807 1, 260 393 8 904 8 14, 100 42, 400 31, 000 20, 200 14, 000 68, 100 27, 100 10, 900 5, 020 3, 160 953 533 270

s Computed by subdividing day.
t Less than 0.5 ton.
a Computed from estimated concentration graph.

### CUMBERLAND RIVER BASIN--Continued '

### CUMBERLAND RIVER AT WILLIAMSBURG, KY .-- Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

		April		<u> </u>	May			June	
	Man	Suspende	d sediment		Suspende	d sediment		Suspende	d sediment
Day	Mean dis-	Mean	_	Mean	Mean		Mean	Mean	
~-,		concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
•	0 200			<del>   </del>					
1	2,720	17	125	2,660	15	108	226	10	6
2	2,360	7	45	2,150	10	58	205	10	6
3	2,110	6	34	1,760	7	33	190	6	3
4	1,900	5	26	1,480	5	20	175	5	2
5	1,670	5	22	1,240	5	17	163	2	1
	1,010			1,510	٠,		100		•
6	1,940	40	- 000	1 070	2	ا م	161	2	1
7	1,540	42	s 236	1,070		6	151 157		
	3,750	108	1,090	930	3	8		1	(t)
8	4, 290	85	984	822	2	4	175	1	(t) 2
9	3,560	29	279	714	3	6	282	2	2
0	2,910	13	102	635	1	2	500	3	4
		1		1 1		i	i :		
1	2,530	18	123	590	1	2	545	6	9
2	2,410	18	117	555	1	1	870	41	96
3	2, 400	29	188	575	1	a1	750	48	97
4	3, 260	37	326	655	2	"4	570	13	20
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5	5, 520	67	998	798	4	a 9	455	7	•
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6	6, 290	92	1,560	786	5	11	372	5	5
7	4,850	36	471	660	5	9	303	3	2
8	3,580	17	164	590	5	8	261	4	3
9	2,840	îi	84	495	5	7	230	2	1
0	2,360	ii	70	422	5	6	205	2	1
	2, 300	1 11	101	1 200	۱ .	١	200		•
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1	2,000	7	38	377	5	5	196	2	1
2	1,810	3	15	364	2	2	550	3	4
3	1,690	2	9	386	2	2	460	6	7
4	1,870	28	141	395	3	3	350	14	13
5	2,950	41	326	440	2	2	306	4	3
	-,		1		- 1	- }	555	1	-
6	4, 590	83	1,030	470	3	4	408	17	19
7	6 900		899				870		
7	6, 280	53		436	5	6		40	94
8	6, 120	39	644	364	4	4	670	24	43
9	4,720	54	688	314	6 l		475	9	12
			000		· · · · · · · · · · · · · · · · · · ·	5			
0		23							
0	3, 470		215	282	8	6	338	7	6
0 1	3, 470	23	215 	282 250	8 10	6 7	338		6
0		23  		282	8 10 	6		7  	6
1	3, 470	23	215 	282 250	8 10	6 7	338		6
Total.	3, 470  98, 750	23   July	215  11,049	282 250 23,665	8 10  August	6 7 366	338  11, 408	7   September	470
Total.	3, 470 98, 750 264	23   July 10	215  11,049	282 250 23, 665	8 10 August 23 [	366 19	338  11, 408	7   September 2	470 (t)
0 1 Total.	3, 470  98, 750 264 216	23  July 10 10	215  11,049 7 6	282 250 23,665 306 314	8 10 August 23 12	366 19 10	338  11,408 84 76	7   September 2 2	(t)
Total.	3, 470  98, 750 264 216 184	23   July 10 10 5	215  11,049 7 6 2	282 250 23,665 306 314 244	8 10 August 23 12 5	6 7 366 19 10 3	338  11,408 84 76 80	7   September 2 2 2 5	(t) (t) 1
Total.	3, 470  98, 750 264 216 184 160	23   July 10 10 5	215  11,049 7 6 2 1	262 250 23, 665 306 314 244 258	8 10 August 23 12 5 2	19 10 3 1	338  11,408 84 76 80 73	7  September 2 2 2 5 4	(t) (t) 1
1	3, 470  98, 750 264 216 184	23   July 10 10 5	215  11,049 7 6 2	282 250 23,665 306 314 244	8 10 August 23 12 5	6 7 366 19 10 3	338  11,408 84 76 80	7   September 2 2 2 5	(t) (t) 1
11 Total.  12 34	3, 470  98, 750 264 216 184 160 148	23   July 10 10 5 3	215  11,049 7 6 2 1	282 250 23, 665 306 314 244 258 236	August 23 12 5 2 2	19 10 3 1 1	338  11, 408 84 76 80 73 64	7   September 2 2 2 5 4 6	(t) (t) (t) 1
11 Total.  12 34 6	3, 470  98, 750 264 216 184 160 148	23  July 10 10 5 3 2	215  11,049 7 6 2 1 1	282 250 23, 665 306 314 244 258 236	8 10 August 23 12 5 2 2 2 3	19 10 3 1 1 1	338  11,408 84 76 80 73 64	7  September 2 2 5 4 6	(t) (t) 1
11 Total.  12 34 6	3, 470  98, 750 264 216 184 160 148	23   July 10 10 5 3	215  11,049 7 6 2 1	282 250 23, 665 306 314 244 258 236	August 23 12 5 2 2	19 10 3 1 1	338  11, 408 84 76 80 73 64	7   September 2 2 2 5 4 6	(t) (t) (t) 1
7	3, 470 98, 750 264 216 184 160 148 154 142	23   July 10 10 5 3 2	215  11,049 7,6 6,2 1,1	282 250 23, 665 306 314 244 258 236	8 10 August 23 12 5 2 2 2 3 3 3	366 19 10 3 1 1	338  11,408 84 76 80 73 64 56	7   September 2 2 5 4 6	(t) (t) (t) 1 1
7	3, 470  98, 750 264 216 184 160 148 154 142 172	23  July 10 10 5 3 2	215  11,049 7 6 2 1 1 1 2 2	282 250 23,665 306 314 244 258 236 190 172 166	August  23 12 5 2 2 3 3 4	366 19 10 3 1 1 2 2	338  11,408 84 76 80 73 64	7  September 2 2 5 4 6 7 5 2	(t) (t) (t) 1 1
D	3,470 	23  July 10 10 5 3 2 3 4 4 4	215  11,049 7 6 2 1 1 1 2 2 15	282 250 23, 665 306 314 244 258 236 190 172 166 267	August  23 12 5 2 2 3 3 4 21	6 7 366 19 10 3 1 1 1 2 1 2 2 1 2 8 1 9	338  11,408 84 76 80 73 64 56 48 42 38	7 September 2 2 2 5 4 6 6 7 5 2 2 2	(t) (t) (t) 1 1
0	3, 470  98, 750 264 216 184 160 148 154 142 172	23  July 10 10 5 3 2	215  11,049 7 6 2 1 1 1 2 2	282 250 23,665 306 314 244 258 236 190 172 166	August  23 12 5 2 2 3 3 4	366 19 10 3 1 1 2 2	338  11,408 84 76 80 73 64 56 48	7  September 2 2 5 4 6 7 5 2	(t) (t) (t) 1 1
D	3,470 	23  July 10 10 5 3 2 3 4 4 16 22	215  11,049 7 6 2 1 1 1 2 2 2 15 22	282 250 23, 665 306 314 244 258 236 190 172 166 267 590	August  23 12 5 2 2 3 3 4 21 172	6 7 366 19 10 3 1 1 1 2 1 2 1 2 8 19 274	338  11,408 84 76 80 73 64 56 48 42 38 35	7   September 2 2 5 4 6 7 5 2 2 2 3	(t) (t) (t) 1 1
Total.  Total.  1	3,470 	23   July 10 10 5 3 2 3 4 4 16 22 24	215  11,049 7 6 2 1 1 1 2 2 15 22	282 250 23, 665 306 314 244 258 236 190 172 166 267 590	August  23 12 5 2 2 3 3 4 21 172 62	6 7 366 19 10 3 1 1 1 2 1 2 2 1 2 274 94	338  11,408 84 76 80 73 64 56 48 42 38 35	7 September 2 2 5 4 6 6 7 5 2 2 3 3 3	(t) (t) (t) 1 1
Total.  Total.  2	3,470 98,750 264 216 184 160 148 154 172 338 372 530 382	July 10 10 5 3 2 2 4 4 4 6 22 2 4 6	215  11,049 7 6 2 1 1 1 2 2 2 15 22	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732	August  23 12 5 2 2 2 11 172 62 70	6 7 366 19 10 3 1 1 1 2 2 1 2 5 19 2 7 4 138	338  11,408 84 76 80 73 64 56 48 42 38 35	7 2 2 2 5 4 6 6 7 5 2 2 2 3 3 3 3 3 3	(t) (t) (t) 1 1
Total.  Total.  3	3, 470 98, 750 264 216 184 160 148 154 142 172 338 372 530 382 303	23  July 10 10 5 3 2 3 4 4 16 22 24 6 5	215  11,049 7,6 2,1 1,1 1,2 2,2 15,22 34,6 4,4	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670	8 10 23 12 5 5 2 2 2 2 3 3 4 4 21 172 62 70 55	6 7 366 19 10 3 1 1 1 2 1 2 2 1 2 274 94	338  11,408 84 76 80 73 64 48 42 38 35 31 37	7 September 2 2 5 4 6 6 7 5 2 2 3 3 3 3 2 2	(t) (t) (t) 1 1
7	3, 470 98, 750 264 216 184 160 148 154 172 338 372 530 382 303 747	23 July 10 10 10 5 3 2 2 4 4 6 6 5 15	215 11,049 76 6 2 1 1 1 1 2 2 1 1 5 2 2 3 4 6 6 4 8 8 38 6	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670 475	August  23 12 5 2 2 2 11 172 62 70	6 7 366 19 10 3 1 1 1 2 2 1 2 5 19 2 7 4 138	338  11,408 84 76 80 73 64 56 48 42 38 35	7 2 2 5 4 6 6 7 5 5 2 2 3 3 3 3 2 2 2 2	(t) (t) (t) 1 1
7	3, 470 98, 750 264 216 184 160 148 154 142 172 338 372 530 382 303	23  July 10 10 5 3 2 3 4 4 16 22 24 6 5	215  11,049 7,6 2,1 1,1 1,2 2,2 15,22 34,6 4,4	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670	8 10 2 3 12 5 5 2 2 2 2 3 3 4 4 21 172 62 70 55	6 7 7 366 19 10 3 1 1 1 2 2 1 2 2 19 274 94 138 99	338  11,408 84 76 80 73 64 48 42 38 35 31 37	7 September 2 2 5 4 6 6 7 5 2 2 3 3 3 3 2 2	(t) (t) (t) 1 1
7	3, 470 98, 750 264 216 184 160 148 154 172 338 372 530 382 303 747	23 July 10 10 10 5 3 2 2 4 4 6 6 5 15	215 11,049  7 6 6 2 1 1 1 1 2 2 1 1 5 2 2 4 6 6 4 4 8 38 6 8	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670 475	8 10 23 12 5 5 2 2 2 1772 62 70 55 28	19 10 3 3 1 1 1 2 2 1 2 1 2 1 2 1 2 1 3 3 3 1 1 1 1	338  11,408 84 76 80 73 64 56 48 42 38 35 35 31 37 35	7 2 2 5 4 6 6 7 5 5 2 2 3 3 3 3 2 2 2 2	(t) (t) (t) 1 1
0	3, 470 98, 750 264 216 126 148 154 142 172 338 372 530 382 303 747 1, 010	23 July 10 10 10 5 3 3 4 4 16 6 22 24 6 5 15 30	215 	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670 475 300	8 10 23 12 23 12 2 2 2 2 2 2 2 2 172 62 70 55 28 19	19 10 366 19 10 3 3 1 1 1 2 2 8 19 274 94 138 99 36 15	338 	7	(t) (t) (t) 1 1
0	3,470 98,750 264 216 184 160 148 154 142 172 338 372 530 303 77 1,010 630	23	215	282 250 23, 665 306 314 244 258 236 190 172 166 267 590 565 732 670 475 300	8 10 August 23 12 5 2 2 2 2 3 3 4 4 21 172 62 70 55 28 19 15	19 10 10 10 11 11 12 21 12 819 274 94 138 99 36 15	338  11,408 84 76 80 73 64 56 48 42 238 35 35 31 37 35 30 26	7	(t) (t) (t) 1 1
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Total discharge for year (cfs-days) 961, 529
Total load for year (tons) 563, 989
s Computed by subdividing day. a Computed from estimated concentration graph. t Less than 0.5 ton.

CUMBERLAND RIVER BASIN--Continued

CUMBERLAND RIVER AT WILLIAMSBURG, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube; D, deconfaction; P, pipette, S, steves; N, in native water; C, remically dispersed: M, and distilled water; C, remically dispersed: M, mechanically dispersed

	:	Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM
			1,000				
			0.500 1.000				
			0.350				
		Percent finer than indicated size, in millimeters	0.002 0.004 0.008 0.016 0.031 0.062 0.125 0.250 0.350	1	100	100	100
		ize, in m	0.125	-	66	66	88
		ndicated s	0.062	100	97	86	98
	ediment	ner than i	0.031	86	92	82	92
	Suspended sediment	Percent fi	0.016	93	4	86	87
	S		900.0	42	8	1	73
			0.004	63	53	22	26
	,		0.003	20	40	40	42
for the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second o		Concentration of suspension	analyzed (ppm)	916	962	458	1,360
		٥	of sample (ppm)	592	336	313	1,030
	Water	tem-	ature (°F)				
-		Discharge t		23, 700	16, 400	16, 200	29,700
		Time		7:30 a.m.	2:10 p.m.	7:30 a.m.	7:30 а.т.
	i	Date of collection		Dec. 31, 1954	Feb. 24, 1955	Mar. 1	Mar. 23

### CUMBERLAND RIVER BASIN -- Continued

### CUMBERLAND RIVER NEAR BURKESVILLE, KY.

LOCATION.--At Neelys Ferry on State Highway 61, half a mile downstream from Raft Creek, 3½ miles south of Burkesville, Cumberland County, and about 37 miles downstream from gaging station near Rowena.

DRAINAGE AREA.--6,050 square miles.

RECORDS AVAILABLE.--Chemical analyses: January 1952 to September 1954.

Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 75°F July 26; minimum, 39°F Feb.12-15,18.

EXTREMES, 1949-55.--Maximum, 81°F June 30 to July 1, 1951; minimum, 34°F Feb.2-4,1951.

REMARKS.--Daily water temperatures reported are averages of twice-daily measurements. The data reported under extremes are the individual maximum and minimum measurements. No discharge records available at this station.

Temperature (°F) of water, water year October 1954 to September 1955

Twice-daily measurements at approximately 7 a.m. and 3 p.m.7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Au _l .	Sept.
1	60	51	50	46	43	52	46	50	50	58	7)	57
2	62	50	51	46	42	52	48	51	51	59	63	58
3	62	50	50	46	41	51	48	50	51	56	5₹	58
4	64	50	50	48	40	46	48	52	51	58	5₹	59
5	66	50	50	49	42	50	50	52	52	58	5₹	56
6	62	49	48	48	42	50	50	52	54	56	5.	56
7	59	50	48	46	42	42	48	52	54	58	54	56
8	58	52	48	46	40	41	46	52	52	57	63	56
9	57	52	48	46	41	42	48	52	52	57	60	58
10	60	52	48	45	42	44	48	52	54	58	57	57
11	64	51	48	45	40	44	50	52	56	62	5∂	56
12	64	52	48	45	39	44	50	52	54	65	5/₹	56
13	64	53	48	44	39	44	50	52	53	60	57	56
14	62	53	47	44	40	44	50	52	53	60	5.₹	56
15	59	52	47	44	40	45	50	52	52	59	6.1	56
16	54	53	46	44	40	46	50	52	53	58	58	54
17	52	54	48	44	40	42	50	50	53	- 58	5/3	54
18	54	55	46	44	40	44	50	50	54	62	56	56
19	54	56	45	43	40	44	50	50	53	66	5₽	56
20	53	56	44	43	42	46	50	51	54	63	56	55
21	54	52	45	43	42	46	50	51	54	58	5€	56
22	54	52	46	43	41	46	50	52	54	60	60	56
23	56	52	46	42	40	44	50	56	54	60	59	55
24	54	51	46	42	40	44	50	51	54	63	56	55
25	56	50	44	42	41	44	50	50	54	66	56	56
26	55	50	44	42	42	43	50	51	54	70	56	56
27	56	51	44	42	46	42	50	52	58	70	56	58
28	54	51	46	41	50	44	50	52	54	62	56	60
29	52	50	50	41		46	50	50	58	58	60	60
30	50	50	47	40		45	50	52	58	63	56	62
31	48		45	41		46		51		66	54	
ver-		50					40					57
age	57	52	47	44	41	45	49	51	54	61	58	57

Aver-

age

### CUMBERLAND RIVER BASIN -- Continued

### CUMBERLAND RIVER AT SMITHLAND, KY.

LOCATION.--At gaging station at bridge on U. S. Highway 60 at Smithland, Livingston County, 1 mile downstream from McCormick Creek, and 2.8 miles upstream from mouth.

DRAINAGE AREA:--18,080 square miles, approximately.

DRAINAGE AREA.--18,080 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1950.

Water temperatures: October 1949 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 90°F Aug. 3; minimum, 37°F Jan. 27.

EXTREMES, 1949-55.--Water temperatures: Maximum, 90°F Aug. 3, 1955; minimum, 34°F Feb.3-5,

7. 1901.
REMARKS. --Daily water temperatures reported are averages of twice-daily measurements. Data reported under extremes are the individual maximum and minimum measurements. Records of discharge for water year October 1954 to September 1955 given in WSP 1386.

Temperature (°F) of water, water year October 1954 to September 1955 Twice-daily measurements at approximately 8 a. m. and 5 p. m. /

Oct. Day Nov. Jan. Feb. Mar. Apr. May June July Aug. Sept. 75 48 54 RN 54 56 Q 15 54 RR 64 59 45 55 ĸ۵ 6R 44 23 72 41 51 44 44 47 

83

### TENNESSEE RIVER BASIN

## EAST FORK PIGEON RIVER NEAR CANTON, N. C.

LOCATION.--Temperature recorder at gaging station on right bank 800 feet upstream from U. S. Highway 276, 0.4 mile downstream from Dix Creek, 1.7 miles upstream from confluence with West Fork Pigeon River, and 5.2 miles southwest of Canton, Haywood County.

DRAINAGE AREA.--51.5 square miles

RECORDS ANILABEL:--July 1944 O September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 79°F July 15, 20, 30, Aug. 16, 1954; minimum, 33°F on many days during December 1954, January,

EXTREMES, 1954-55.--Water temperatures: Maximum, 84°F July 15, 20, 30, Aug. 16, 1954; minimum, 33°F on many days during December 1954, January,

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1386.

Temperature (°F) of water, water year October 1954 to September 1955	nous ethyl alcohol-actuated

	ı	e.	55	<b>*</b>	65	řδ	4	4	2	60	64	ī.	65	ñ	4	<u></u>	6	0	9		62	2	4		65	4.	52	61	=	2	<u>ن</u> کا	63
	September	mim :	L	_								_						_	_			_		_								Н
	Sei	max	7	=	72	<u>۲</u>	99	70	-	12	75	2	72	2	9	~	2	7.1	-	=		-	-	- 2	89	5	9		-	-	<b>%</b> :	7
	August	min	63	62	63	62	8	63	63	64	63	63	65	99	63	63	63	62	63	63	2 4 2 4	64	65	64	63	£	63	63	63	65	65	84
	ηγ	max	67	71	71	11	71	70	11	89	11	72	74	10	72	69	65	69	99	73	7.2	74	73	69	2.5	2	72	2	74	73	<b>7</b> 2	71
	July	mtm	61	62	99	9	65	.64	65	65	64	65	99	63	63	63	63	63	64	64	65	64	63	65	9 5	•	67	67	89	65	98	65
	ηſ	max	74	75	75	73	72	7.1	75	7.1	7.1	74	7.1	68	67	89	69	15	15	72	7.7	7.1	73	7	2	E.	77	4	4	73	69 98	73
	9	min	53	54	22	28	28	9	61	28	26	22	28	28	22	23	26	22	29	23	20	62	61	90	20	19	62	63	61	62	9 :	59
7	June	max	99	99	99	68	69	67	67	28	63	62	89	62	99	99	67	89	69	64	68	69	11	62	72	ç	73	89	20	69	6 :	67
nograp		nin	20	21	25	53	22	55	22	54	53	22	28	28	9	28	28	57	55	22	57	29	57	24	22	20	22	26	28	9	52	26
continuous ethyl alcohol-actuated thermograph7	May	max	63	64	65	67	68	65	62	64	67	99	64	64	63	99	63	28	63	67	64	64	29	64	61	62	99	64	69	64	65	64
-actuato	_	nta L	43	48	48	47	20	20	49	43	44	41	21	49	54	21	49	49	48	21	54	52	53	24	22	22	20	20	48	49	20 :	20
alcohol	April	max	53	21	28	28	22	53	22	24	22	26	26	29	22	22	29	29	9	90	90	22	62	20	9 :	ě	53	61	19	9	62	28
s ethyl	ч	min	49	45	44	49	21	47	40	37	39	43	49	22	21	48	48	51	46	6	4 4 8 8	20	44	#	42	<b>4</b>	42	35	37	39	39 14	45
ntinuon	March	max	53	22	21	25	28	25	47	42	20	64	26	22	54	24	26	54	21	25	53	22	22	20	22	2	20	44	43	48	23	25
	١.	min	33	38	38	33	33	35	40	40	37	38	32	33	33	33	34	37	40	37	8 <b>4</b>	45	45	45	£ 6	n n	38	43	46	;	; ;	38
attachn	February	max	38	42	43	39	32	40	42	43	42	44	43	32	34	34	41	40	45	45	£ 8	46	46	8	42	- 40	46	48	2	:	1 1	43
rature	H	nin	43	45	41	42	47	48	39	36	41	42	39	38	34	33	34	37	34	88	8 8	33	35	34	8 8	23	33	35	33	33	ន្លន	37
Recorder with temperature attachment,	January	max	46	42	45	49	21	21	48	41	45	42	42	41	40	34	41	40	39	37	8 8 4 4	36	40	37		ç	37	38	ဗ္ဗ	33	35	40
ler with	ļ.	min	37	38	33	33	36	34	33	33	33	34	33	36	39	40	37	34	38	33	3.4	34	34	34	322	<b>*</b>	33	36	41	45	<b>4</b> 4	36
Record	December	一	41	42	38	38	38	38	34	33	42	38	37	39	41	41	<b>4</b> 0	38	40	40	32 32	34	34	32	 8 8	37	39	41	47	46	8 <b>4</b>	39
`	H	In max	43	0	37	40	42		41	42	44		44	44	44	45	5	6	20	25	50	- 2	44	44	£ 4		36	35	38	33	37	43
	November	B	L	_	_					_	25		20	_	_	_					. 4. 2.4.		49		_	· 	_	40			₹ :	48
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	October	min	L		8					_						_						_	_	_		_	_					Н
	0	max	L		73	_					62										228							_			 8.85	62
																:								:	:	:	:	:	:	:		
	To C	, a	************					9	7				11	12		:					19.				:	• • • • • • • • • • • • • • • • • • • •			:			Average
			1	~	3.	4	5	9			6	10	11	12	13	14	15	16	17	18	19.	21	22	23	24	25	26	27.	Z8.	Z9.	31	,
																																,

### TENNESSEE RIVER BASIN--Continued

DOE RIVER AT ELIZABETHTON, TENN

Temperature (°F) of water, water year October 1954 to September 1955 / Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph/

ı	ı																															ı	
mhor		min	68	89	49	89	69	65	65	67	99	65	65	99	62	62	63	64	64	63	63	64	67	99	99	65	63	61	8	9	2	:	65
Contombor		max	22 5	2 22	12	72	72	12	72	2	7	20	17	69	69	69	20	2	2	69	69	70	72	22	69	67	99	65	65	67	99	:	2
+01	1	min	2 2	22.2	22	73	71	73	69	11	69	12	72	69	89	69	69	20	20	20	7	11	75	73	2	2	70	2	69	11	72	71	11
Aumort	2	max	78	- 62	42	79	78	8	74	75	92	94	92	73	72	72	16	74	23	78	28	78	92	92	75	16	76	92	16	16	77	76	92
		min	89	2	17	70	20	2	70	20	2	12	2	69	89	71	72	73	72	22	7.	72	7	2	72	20	7	72	23	2	77	72	17
Teller	:	max	75	12	94	75	75	75	73	73	11	75	73	7	74	75	42	43	8	81	48	16	48	- 82	11	72	78	80	81	16	18	76	92
ļ		min	26	20	61	62	2	8	29	22	29	90	29	28	28	26	29	62	62	63	63	99	67	99	65	99	99	99	65	67	- 89	;	62
		max	65	89	89	11	71	69	63	62	61	63	62	61	61	65	89	20	67	67	2	73	72	7	7	2	73	11	73	72	7	:	89
	÷	min	8 1	20	28	29	28	22	28	22	26	19	09	9	20	29	28	24	28	29	8	62	S	8	2	<b>6</b>	62	49	99	49	61	58	09
	N.	max	61	3.5	67	67	99	99	63	64	65	25	65	62	63	61	61	65	99	67	89	99	99	69	89	99	72	72	75	73	65	65	99
,		mim	44	48	48	20	20	49	47	47	20	54	22	22	Z	22	53	Z	22	29	20	28	24	92	28	22	51	20	48	21	25	:	52
	unde	max	52	22	26	22	23	22	25	22	28	22	29	8	20	29	9	62	63	99	63	61	8	9	61	9	25	25	24	82	8	:	28
	70.0	mim	20	46	20	53	48	4	41	44	47	49	7,	83	21	27	21	47	48	47	8	22	46	42	44	47	41	37	39	41	42	43	47
Mench 1 Anni	Mai	max	<b>75</b> 2	21.5	83	29	28	49	46	20	49	26	26	22	22	Z	75	51	48	49	23	22	22	49		21	48	42	43	47	49	49	51
	ar.	min	37	38	35	37	41	43	42	39	4	37	35	32	35	36	37	42	39	41	43	46	49	46	4	43	42	44	48	;	;	;	40
Tohan a	Lenz	max	41	\$ 9	40	41	44	4	44	42	45	45	37	32	36	<del>-</del>	42	43	44	4	49	49	20	6	46	46	45	48	2	;	;	;	44
	2	min	45	3 4	45	48	49	42	38	41	42	42	41	38	8	37	38	37	37	37	36	36	39	38	37	37	36	39	36	36	36	35	39
Terrore acceptance	Jamary	max	45	4	48	52	51	49	42	43	43	42	43	42	38	38	41	40	40	40	38	39	41	41	38	38	41	41	38	38	38	38	42
ŧL.	2	min	38	36	35	37	36	8	32	36	35	34	36	39	41	38	37	38	38	35	35	34	32	& .	37	36	36	38	42	8	41	40	37
Postar har	Paga	max	41	4 5	38	38	39	36	36	39	8	37	39	42	42	41	38	42	42	38	35	36	37	38	38	39	40	42	48	20	20	42	40
1	72	min	45	4	40	42	41	4	42	44	44	43	43	44	45	45	48	20	22	75	21	46	45	4	4	42	40	39	39	40	37	;	44
Morrombon	MOVE	max	49	42	42	43	44	46	47	49	48	47	47	49	20	49	52	54	26	24	26	21	47	45	45	44	42	40	41	42	40	1	47
	7	min	66	99	99	99	67	28	75	28	28	09	62	64	63	22	53	21	21	21	48	49	48	48	20	20	53	22	26	22	47	44	99
1000	3	max	69	12	11	72	1	67	9	62	65	99	89	69	69	67	57	26	26	22	8	23	25	22	92	92	26	22	29	28	25	47	61
	Dav		1		4	5	6	T	8	6	10	11	12.	13	14	15	16	17.	18	19		21	22	73	24	25	26.	27	28	29	30	31	Average

### TENNESSEE RIVER BASIN--Continued

NORTH FORK HOLSTON RIVER NEAR SALTVILLE, VA.

LOCATION.--4t gaging station 0.5 mile upstream from Cedar Branch bridge, 1.5 miles northeast of Saltville, Smyth County, and 7.8 miles downstream from Laurel Creek.

Laurel Creek.

BARIANGE AREA.--22.

RECORDS ANAILABLE.--Chemical analyses: June 1930 to March 1931, October 1949 to September 1950, October 1954 to September 1955.

EXTREMENS. 1930-31.--Dissolved solids ppp Mar. 21.-31.

RECORDS ANAILABLE.--Chemical analyses: June 1930 to March 1931, October 1949 to September 1954 to September 1955.

RECORDS ANAILABLE.--Chemical analyses: June 1930 to March 1931, October 1950, October 1954 to September 1958.

REMARKS.--1930-31 samples collected at Cedar Branch bridge. Records of discharge for water year October 1954 to September given in WSP 1386.

		Color	8	30	5	25	ū	1	ıc	ıc	က
		рĦ	7.9	7.2	7.9	7.7	8.0	8.3	8.1	8.2	7.8
	Specific conduct-	ance (micro- mhos at 25°C)	261	105	180	105	164	225	249	253	259
	Hardness as CaCOs	Non- carbon- ate	10	6	6	6	7	6	10	5	14
	Hardness as CaCO,	Calcium, mag- nesium	181	46	88	47	81	116	131	128	145
	Dissolved solids	(residue on evap- oration at 180°C)	138	65	86	61	102	134	129	134	140
ber 1955		(NO ₃ )	1.7	3.5	2.8	3.6	3.3	2.9	1.7	1.9	.7
to Septem	í	Fluoride (F)	0.0	.1	٥.	.1	0.	٥.	1.	;	0.
Chemical analyses, in parts per million, water year October 1954 to September 1955		(C1)	1.9	1.2	1.7	1.4	1.5	1.8	1.5	3.2	2.1
ater year O		Sulfate (SO ₄ )	11	8.9	10	7.0	7.3	9.2	8.2	13	12
million, w	Bicar-	bonate (HCO ₃ )	148	45	96	47	6	131	148	150	159
parts per	Potas-	sium (K)	1.6	1.1	∞.	1.1	6.	1.1	1.0	1.5	1.7
alyses, in		(Na)	1.3	o.	1.4	1.1	1.2	1.3	1.3	1.5	1.3
emical ar	Mag-	nesium (Mg)	13	2.1	6.8	2.4	6.3	21	13	13	17
ົວ	Cal-	cium (Ca)	31	12	24	12	22	30	31	30	30
		Fe)	0.04	8.	.0	8	20	8	.04	8	20.
		(SiO ₂ )	3.2	4.8	3.6	4.8	3.4	4.8	4.1	4.3	0.1
	Mean	discharge (cfs)	49	1,500	123	2,500	352	83	20	36	29
		Date of collection	Oct. 29, 1954	Dec. 30	Jan. 28, 1955	Feb. 28	Apr. 1	May 30	June 30	Aug. 31	Sept. 30

### FENNESSEE RIVER BASIN -- Continued

## NORTH FORK HOLSTON RIVER AT HOLSTON, VA.

LOCATION: --At gaging station at bridge on U. S. Highway 19, 100 feet downstream from Greendale Creek, 0.4 mile upstream from Garrett Creek, 0.5 mile east of Holston, Washington County, and 0.6 mile upstream from Little Moccasin Creek.

DRAINAGE AREA. --402 square miles.

RECRISE AVAILABLE.—Chemical analyses: October 1951 to September 1955.

Water temperatures: October 1951 to September 1955.

Water temperatures: October 1951 to September 1956.

Water temperatures: October 1951 to September 1956.

Water temperatures: Maximum, 4,640 ppm Sept. 21, aninimum, 431 ppm Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Aniroman Ani

water year October 1954 to September 1955 in parts per million. Chemical analyses,

	pH Color	7.1 3	7.0	7.1	8.8	6.8	7.2	7.4	7.3		7.5					7.9				7.5	7.7	7.2
Specific conduct-	ance (micro- mhos at 25°C)	11,200	12,400	11,400	7,980	8,070	4,050	2.520	1,800	2,330	2, 100	2, 590	3,390	1.680	1,780	1,360	920	968	994	2,190	1.490	1,710
Hardness is CaCO _s	Non- carbon- ate	3,590	3,830	3,610	2,410	2,560	1,210		460	_	_			461	206	395	295	264	287	620	435	465
Hardness as CaCOs	Calctum, mag- nestum	3,640	3,870	3,660	2,460	2,600	1,260	402	209	717	699	820	1,020	520	562	441	325	325	345	684	485	528
Dissolved	solids (sum)	6,430	:	;	;	;	;		:	;	1,090	;	1	;	:	:	;	;	;	1.140		;
	(NO _s )																					
	Fiuoride (F)																	•				
:	Chloride (C1)	3,900	4,290	3,900	2,630	2,670	1,280	790	210	889	615	174	1,030	466	518	374	235	248	262	640	419	492
	Sulfate (SO ₄ )	105	92	93	89	69	38		27	56	29	31	\$	26	28	23	19	22	20	32	22	26
Bicar-	bonate (HCO ₃ )	53	47	53	29	47	62	72	9	74	89	69	81	73	89	26	74	74	11	78	19	92
Potas-	sium (K)			6.0					2.0					1.9	2.1	1.8	1.7	2.1	1.5	2.4	1.8	1.9
	Sodium (Na)	940	1,020	888	618	612	284	191	123	75	135	173	228	102	112	75	44	44	45	150	81	86
Mag-	nesium (Mg)	62	30	82	19	20	2	8.3	6.7	5.7	7.3	6.5	7.2	5.2	5.5	3.4	8.8	4.3	4, 5	11	5.7	8.2
Cal-	cium (Ca)			1,420				269	193	278	226	318	397	200	216	171	135	123	131	256	185	198
	(Fe)	0.04	8	8	8.	8	8.	8.				8	8.	8.	8	8	٤.	5	8.	2.	8	.02
	(SiO ₂ )	1	;	1	!	;	!	!	!	:	12	:	:	;	:	:	;	;	1	5.8	;	:
Mean	discharge (cfs)	75.2	=======================================	72. 5	99.0	100	234	466	646	759	292	436	249	1,520	689	1,792	3,655	3,576	2,106	498	1,174	787
	Date of collection	Oct. 1-10, 1954	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec. 6-10	Dec. 11-20	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-20	Feb. 21-28	Mar. 1-10	Mar. 11-20	Mar. 21-31	Apr. 1-10	Apr. 11-20	Apr. 21-30

			:
7.5	7.7.7.7. 7.8.8.4.8.	4.7.7.7.00.7.00.7.00.7.00.7.00.7.00.7.0	-
3,000 2,900 5,120	7,650 6,430 7,700 7,670 4,370		5,800
	2,280 1,880 2,280 2,380 1,240 3,110	3,020 2,400 3,500 4,540 4,610	1,700
877 875 1,530	2,330 1,930 2,320 2,430 1,280 3,150	3,060 2,440 3,530 4,570 4,640	1,750
	4, 230	11111	:
-			
			_
915 960 1,700	2,620 2,150 2,570 2,600 1,390 3,500	3,650 2,400 2,750 4,980 5,150	1,830
30 29 41	55 59 53 75 75	87 56 92 117 104	20
61 57 63	61 53 54 44	4 4 4 4 4 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4	90
2 1 8	0,0,0,0,4 40,005	6.6 0.9 0.9 0.9	3.4
202 200 380	585 450 545 592 305 800	875 625 932 1,210 1,200	429
10 17	20 20 20 19 12 25	22 39 28 43	18
335 331 584	901 746 897 941 494 1,220	1,190 913 1,370 1,770 1,790	674
0.01	22222	28888	0.01
. ; ; ;	111111	11111	:
388 405 213	163 158 116 133 273 83.8	93.3 55.1 6.9 9.0 9.0	a 598
May 1-10, 1955 May 11-20 May 21-31	June 1-10 June 11-20 June 21-30 July 1-10 July 11-20 July 21-31	Aug. 1-10	Average

a Includes missing days.

### TENNESSEE RIVER BASIN -- Continued

### NORTH FORK HOLSTON RIVER AT HOLSTON, VA. -- Continued

Temperature (°F) of water, water year October 1954 to September 1955

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
77	47		42	37	48	48	65	76	80	83	77
				39	41	55	65	77	78	83	78
					50	56	71	77	79	85	76
	47		48	39	50	52	73	79	79	84	78
80	40		40	38	51	55	76	78	80	84	79
75	47	37	40	37	48	56	76	80	79	85	78
	49	45	41	42	44	55	75	76	80	85	78
63	47	36	40	40	45			75			78
62	48	38	40								78
73	43	39	39	36	45	60	74	71	79	84	78
74	39	40	38	35	48	60	74	71	78	83	79
73	48	39									80
73											79
66											70
60										i	78 78
			-		"	""	12		01		10
58	55	40	40	46	51	60	74	72	82		77
									81	79	76
								73	83	78	74
				40		63	77	73	84	83	75
58	55	36	39	41	53	63	76	75	85	83	74 75 76
56	49	42	40	42	54	64	79	77	85	80	76
		40	39	46	55	63	78	81			77
	57	42	37	42	54		79				
		43	36	39	45	59	79	80			
60	39	40	38	46	43	59	79	80	83	80	74
61	38	45	39	40	40	57	80	81	83		75
60	36	43	37								73
60	37	44									72
54	37			10							69
52	40			j.						)	72
60		44	36		49				83	79	
			<del> </del>	<del> </del>	<del> </del>	-	<del></del>			ļ ————	
63	47	41	39	40	49	59	75	77	81	81	76
	77 78 65 66 80 75 63 62 62 73 74 73 73 73 73 73 75 86 60 60 65 47 47 47 49 49 55 60 60 60 60 60 60 60 60 60 60 60 60 60	77 47 48 44 46 55 66 47 70 49 63 47 73 48 73 48 73 54 66 59 60 53 58 55 57 56 62 58 55 56 62 58 66 60 39 60 37 54 37 55 60 50 50 39 60 37 54 40 55 20 60 57 55 60 50 50 50 50 50 50 50 50 50 50 50 50 50	77 47 78 44 65 50 66 47 80 40 75 47 37 70 49 45 63 47 36 62 48 38 73 43 39 74 39 40 73 48 39 74 45 45 66 49 38 60 53 40 58 55 40 58 55 36 56 49 42 47 45 40 49 57 62 38 58 55 36 56 49 42 47 45 40 49 57 42 55 50 43 60 39 40 61 38 45 60 37 44 54 37 40 52 40 42 60 44	77	777	77	777	77	777	777	77

TENNESSEE RIVER BASIN--Continued

CULLASAJA RIVER AT CULLASAJA, N. C.

LOCATION.--At gaging station at Cullasaja, Macon County, 1.4 miles (corrected) downstream from Ellijay Creek, and 4.1 miles upstream from mouth. DRAINGA ARRA.--86, Square miles. RECORNS ARRA.--86, Square miles. RECORNS AVAILES.--Chemical analyses: October 1954 to September 1955. REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1386.

		Color	2	10 12	17	ဗ	တ	4	10	c C	e2	r.	12	2
		ў Hd	4	6.4	~	6.3	3.2	6.4	1.	 	3.1		6	6.7
	t-				_				-	4	-		-	
	Specific conduct-	ance (micro- mhos at 25°C)	.62	28.2	23	18.	17.	17.3	17.	19.	16.	19.2	17.	19.
	ess CO,	Non- carbon- ate	0	0	•	0	0	0	-	0	0	0	0	0
	Hardness as CaCO ₃	Calcium, mag- nesium	80	6	-	r.	2	ī,	4	c	5	9	4	4
	Dissolved	(residue on evap- oration at 180°C)	27	26	23	20	11	19	18	19	19	22	20	22
er 1955	Nitrate	(NO ₃ )	0.2	4.	e.	٦.	۳.	Τ.	₹.	4.	e.	4.	7.	£.
Chemical analyses, in parts per million, water year October 1954 to September 1955	Fluoride		0.1	0.	٥.	٦.	7.	٦.	۲.	٥.	0.	°.	٦.	0.
ober 1954	Chloride	(CI)	9.0	1.2	1.2	٥.	1.0	1.0	1.2	1:0	۰.	1.0	1.0	1.2
r year Oct	Sulfate	(30°)	1.4	1.3	2.8	2.1	1.1	1.2	1.8	1.3	1.4	1:1	1.3	1.8
lion, wate	Bicar-	bonate (HCO ₃ )	14	12	8	7	9	7	4	80	7	10	8	10
per mil	Potas-	Sium (K)	1.0	1.0	9.	₹.	4.	.5	.5	.5	4.	9.	۰.	5.
s, in parts	Sodium	(Na)	1:8	1.8	1.5	1.3	1.0	1.0	1.0	1.3	1:1	1.4	1.2	1.5
al analyse	Mag-	(Mg)	9.0	6,	9.	~		4.			.2		۳.	8.
Chemic	Cal-	(Ca)	2.2	2.0	1.6	1.6	1.2	1.4	1.1	1.6	1.6	1.6	1.2	1.2
	Iron	(Fe)		.07			89.	. 02	\$	8	. 02	9.	80.	\$
	Silica	(SiO ₂ )	11	7.9	5,5	4.7	6.2	6.4	4.3	7.3	6.7		7.2	8,5
														:
	Mean	aischarge (cfs)	29	31	16	95	174	189	298	142	260	134	201	76
		Date of collection	Oct. 14, 1954	Nov. 12	Dec. 10	Jan. 17, 1955	Feb. 16	Mar. 14	Apr. 11	Мау 9	June 3	July 27	Aug. 10	Sept. 19

PART 4. ST. LAWRENCE RIVER BASIN STREAMS TRIBUTARY TO LAKE SUPERIOR

LOCATION. --Temperature recorder at gaging station, 450 feet downstream from bridge on county highway, 500 feet downstream from Powder Mill Creek, and 24 miles north of Bessemer, Gogebic County.

BRIGGERS ARMAL-202 square miles.

RECORDS AVAILABLE. --Water Temperatures: October 1954 to September 1855.

EXTREMES, 1954-55. --Water Temperatures: Maximum, 79°F July 26; minimum, freezing point on many days during November, December, January, February and March.

BLACK RIVER NEAR BESSEMER, MICH.

3 REMARKS. - Records of discharge for water year October 1954 to September 1955 given in WSP 1387. Stream frozen Nov. 27 to Mar.

Temperature (°F) of water, water year October 1954 to September 1955 Recorder with temperature attachment. continuous ethal alcohol-actuated thermograph 7

	mber	min	28	61	62	62	62	62	20	29	28	28	23	20	21	57	22	9	61	62	65	29	24	25	22	54	25	25	22	22	23	5	1	24
	September	max	63	64	99	99	99	64	63	61	28	8	82	75	28	61	61	62	62	65	65	65	28	28	26	24	25	22	53	22	22	75	:	ક
	st.	min	69	7.1	2	73	74	69	67	64	65	99	65	65	67	67	69	7.1	89	2	74	75	74	7	67	89	89	67	67	88	69	62	28	89
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a Includes estimated temperature, 32°F, on missing days.

### STREAMS TRIBUTARY TO LAKE MICHIGAN

### BLACK RIVER NEAR GARNET, MICH

LOCATION: --Temperature recorder at gaging station, 10 feet upstream from highway bridge, 15 feet downstream from small tributary entering from right, 31 miles upstream from Lake Michigan, and 4 miles southwest of Garnet, Mackinac County.

BAINGE AREA.—28 quare miles, approximately.

RECORDS AALLABLE.—4ster Temperatures: October 1951 to September 1955.

EXTREMES: 1964-55.—4ster Temperatures: Maximum, 637 Adu. 1; minimum, 347 rom many days during December and January.

EXTREMES: 1951-55.—4ster Temperatures: Maximum 687 July 21, 22, 1952; minimum, freezing point on many days during winter months of some years.

REMARKS.—Records of discharge for water year October 1954 to September 1955 given in WSP 1387. River does not freeze over.

Temperature (°F) of water, water year October 1954 to September 1955 P.

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EAST BRANCH ESCANABA RIVER AT GWINN, MICH.

LOCATION --Temperature recorder at gaging station in county park at Gwinn, Marquette County, 1 mile upstream from mouth.

DRAINAGE AREA. -1.25 square miles.

RECORDS AVAILABLE.--Mater Temperatures: November 1954 to September 1955.

EXTREMENS. 1954-55.--Mater Temperatures: Maximum, 79°F July 4; minimum, freezing point on many days in December, January, February, March and April.

REMARKS.--Stream frozen Dec. 1 to Apr. 2. Temperatures given for this period are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, November 1954 to September 1955 Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph?

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# STREAMS TRIBUTAFY TO LAKE MICHIGAN -- Continued

## EAST BRANCH PINE RIVER NEAR TUSTIN, MICH

LOCATION.—-Temperature recorder at gaging station, 75 feet downstream from highway bridge, half a mile upstream from North Branch, 24 miles west of Tustin, Oscola County, and 54 miles northwest of Le Roy.

Tustin, Oscola County, and 54 miles northwest of Le Roy.

BAINAGE AREA.—63 county, and 54 miles northwest of Le Roy.

EXTREMES, 1954-55.—Water temperatures: Maximum, 73°F July 4; minimum, freezing point on many days during December, January, February, and March.

EXTREMES, 1954-55.—Water temperatures: Maximum, 73°F July 4; minimum, freezing point on many days during winter months.

EXTREMES, 1955-55.—Water temperatures: Maximum, 73°F July 4; pi55; minimum, freezing point on many days during winter months.

EXTREMES, 1955-55.—Water temperatures in 1,7 Rs. Febr. 22-25, Mar. 6-8 11-33. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955 er with temperature attachment, continuous ethyl alcohol actuated thermo Recorder with temperature attachment, contin

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	per	ulu	\$	9	40	9	\$	<b>\$</b>	\$	41	40	38	38	40	33	\$	39	39	40	42	43	42	4	\$	39	39	39	38	37	37	37	36	:	000
	November	max	41	<b>\$</b>	40	40	40	40	42	42	41	<b>4</b> 0	40	40	40	4	41	40	42	43	43	43	42	#	<del>2</del>	39	39	39	38	37	37	37	;	Ş
	Jer.	min	55	24	54	57	25	8	46	46	46	49	20	23	22	53	22	48	47	45	43	43	43	44	44	46	46	46	46	43	43	42	#	٩٥
	Octob	max	99	55	22	28	28	25	8	46	49	20	53	54	24	26	26	52	48	47	45	43	44	44	46	47	47	46	- 94	46	43	43	42	9
	A C		1	2	3	4	5	6	7	8	6	10	11	12	13	14	15	16.	17	18.	19	20	21.	22	23	24	25	26	27.	28	29.	30	31	0000000

PINE RIVER NEAR LE ROY, MICH.

LOCATION: --Temperature recorder at gaging station, 15 feet downstream from highway bridge, 3‡ miles downstream from East Branch, 5 miles northwest of Le Roy, Osceola County, and 5‡ miles southwest of Tustin.

DRAINGARA ARRA.--18 square miles.

EXTREMES AVAILABLE: --Water temperatures: January 1953 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 69°F Aug. 1, 2, 5, 6; minimum, freezing point on many days during January, February, and March.

EXTREMES, 1955-5.--Water temperatures: Maximum, 69°F Aug. 1, 2, 5, 6, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Dec. 6 to Feb. 20' Mar. 8-13. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in MSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955

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September	nin	09	8	20	29	09	29	28	24	24	g 	28	2	22	22	24	29	61	61	62	9	28	21	20 0	8 6	2	22	22	22	22	22	:	28
Sept	max	62	9	9	9	19	61	9	28	82	9	9	200	26	24	20	61	62	62	25	62	61	200	8	8 6	28	26	22	98	26	22	:	29
August	mim	29	99	99	99	67	67	99	63	62	62	62	62	62	63	62	63	63	64	64	65	99	99	200	700	29	63	62	63	64	65	29	64
ν	max	69	69	67	89	69	69	68	67	64	•	64	64	64	63	65	65	65	99	99	99	89	89	91	5	2	63	63	64	65	65	2	99
July	min	64	64	64	65	99	99	99	64	64	63	62	62	62	63	65	64	63	64	92	65	65	92	65	20	82	63	99	99	65	65	8	64
F	max	99	65	65	89	89	89	68	99	65	92	65	65	92	99	99	99	64	99	9	61	67	67	99	8 :	65	99	67	81	67	89	89	99
June	utm	23	24	20	20	86	9	29	28	8	24	20	54	23	2	92	24	28	29	9	61	61	9	24	6	96	26	26	28	9	62		24
11.	max	89	29	23	9	61	19	09	29	29	9	29	20	24	22	9	61	62	63	63	64	65	63	09	ĉ	9	29	90	63	64	65	١	9
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ated the	max	54	24	29	29	28	53	53	25	48	45	20	23	24	20	24	26	22	22	24	24	28	21	22	200	28	22	28	28	24	26	22	22
alcohol-actuated thermograph/	nim	38	38	<b>\$</b>	\$	\$	\$	æ	40	<b>4</b> 3	46	48	48	<b>\$</b>	48	41	46	48	48	47	42	46	48	<b>;</b>	<b>2</b> :	42	43	47	48	21	49	:	45
	max	40	7	41	41	41	41	40	43	46	48	6	49	6	49	48	48	20	20	48	48	20	2	49	6.	46	48	51	53	22	24	:	41
continuous ethyl	ntm	33	83	34	32	32	32	32	32	32	8	82	32	32	32	33	33	33	88	8	34	36	83	88	2	33	33	33	33	34	36	37	33
Continuous	max	33	34	35	35	32	34	32	32	36	32	ee	22	32	88	34	34	33	33	32	36	36	36	88	200	33	33	35	36	37	38	39	34
hment,	mim	32	32	32	32	32	32	33	34	% %	34	34	8	33	32	32	33	32	32	33	33	33	33	83	25	32	32	33	33	;	1	:	33
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temperature attachment,	mim	33	34	33	34	34	34	34	34	34	200	32	32	32	32	32	32	32	32	35	32	32	32	22	25	32	32	32	32	32	32	32	33
with temper	max	34	34	34	34	34	34	34	34	34	34	33	32	32	32	32	32	32	32	32	32	32	22	32	27	32	32	32	32	32	32	32	33
H .	mim	37	37	36	8	32	34	34	34	34	46	34	34	33	SS	34	34	34	34	34	33	33	33	233	3	34	35	32	32	33	88	33	34
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November	mim	9	9	40	40	\$	\$	41	42	9	<b>Q</b>	9	40	<b>4</b>	41	40	40	41	42	43	42	41	41	66	3	39	39	38	38	38	31	;	40
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ber	min	53	22	25	26	25	48	46	46	9	64	20	25	25	25	22	48	47	44	<b>\$</b>	£	44	44	45	ş:	94	47	46	44	44	£3:	1	48
Octol	TA BUT	53	23	26	22	26	22	48	46	6	20	25	8	23	54	54	25	48	41	#	44	44	45	¥ ;	¥ :	47	47	47	46	44	44	43	49
	Day	1	2	3	***************************************	2	6	7	8.		10	11	12	13	14	15	16	17	18	19.	20	21	22	23	24	25	26	27	28	29	30	31	Average

### PINE RIVER NEAR HOXEYVILLE, MICH.

LOCATION: --Temperature recorder at gaging station, 500 feet upstream from bridge on State Highway 37, 4½ miles northwest of Hoxeyville, Wexford County, 7 miles east of Wellston, and 9 miles upstream from mouth.

DAINAGA RRA. --531 square miles.

DAINAGA RRA. --Mater temperatures: July 1952 to September 1955.

EXTORMEN SHALABLE. --Mater temperatures: Maximum, 68° Falge. 1 minimum, 32° Falge. 1955.

EXTREMEN 1952-55. --Water temperatures: Maximum, 68° Falge. 1 minimum, 32° Falge. 1955.

EXTREMEN 1952-55. --Water temperatures: Maximum, 68° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge. 1 minimum, 12° Falge.

Temperature (°F) of water, water year October 1954 to September 1955
Recorder with temperature attachment, continuous ethal alcohol-actuated therm

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### STREAMS TRIBUTARY TO LAKE HURON

### PIGEON RIVER NEAR VANDERBILT, MICH.

AMION.--Temperature recorder at gaging station, at Pigeon River Fisheries Experiment Station, 10 miles east of Vanderbilt, Otsego County, and 10% miles southeast of Wolverine. LOCATION.

DRAINGE AREA.—63 square miles, approximately.

RECORDS AALLAREL—Water temperatures: October 1950 to September 1955.

EXTREMES, 1964-65.—Water temperatures: Naximum, 81°F Aug. 1; min.mum, freezing point on many days during December, January, February and March.

EXTREMES, 1964-65.—Water temperatures: Maximum, 81°F Aug. 1, 1965, min.mum, freezing point on many days during winter months.

EXTREMES, 1960-65.—Water temperatures: Maximum, 81°F Aug. 1, 1965, min.mum, freezing point on many days during winter months.

EXTREMES, 1960-65.—Water temperatures and the september 10° Mar. 18, 22, 23, 26-28. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955  $\overline{\rm Recorder}$  with temperature attachment, continuous ethyl alcohol-actuated thermograph/

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September	뒴	28	57	8	29	28	5	3 5	ا <u>ه</u>	ŝ	8	54	5.5	-	3 6	2	<u>~</u>	25	2	38	3 8	5 5	200	8	55	5	23	25		: 	2	2	2	49	20	-	25
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May	max	57	28	62	64	29	22	5 6	8	Z,	48	48	Š	2	5	3	62	63	ğ	3 2	9 6	200	5 5	9	89	62	9	8	8	4	63	29	62	28	62	64	9
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March	max	34	36	34	35	35	88	2	22.0	22	\$	37	37		3 6	2	39	38	36	35	5 6	9	9 6	2	38	36	98	2	5	;	*	22	88	40	4	43	36
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February	max	32	32	33	;	:	-	_	!	;	:	1	83	: :	3 6	22	8	32	:	3 5	3 6	3 5	2 2	*	35	36	25	5	3 5	3	33	22	*	!	;	-	a 32
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Per	mim	ş	23	8	25	52	48		<b>2</b> :	46	47	49	20		5 8	25	22	20	4.7	77	2 3	: :	2 :	2	44	45	47	48	48	2	8	40	45	4	42	40	48
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	Uay	1	2	3	4.	5	9				9	10						15	9				20	***************************************	21	22	23.	24.	25.		702		78	29.	30	31	Average

a includes estimated temperature, 32°F, on missing days.

STREAMS TRIBUTARY TO LAKE HURON--Continued
AU SABLE RIVER AT GRAYLING, MICH.
(Formerly published as Middle Branch Au Sable River at Grayling)

27 at Grayling, Crawford County, and three-quarters S. Highway , : station, 65 feet upstream from bridge on gaging DRAINAGE AREA. --110 square miles. RECORDS AVAILABLE. --Water temperatures: of a mile upstream from East Branch. .--Temperature recorder at

March 1953 to September 1955. Maximum, 80'F July 6, 7, Aug. 1, 2, 5, 6; minimum, freezing point on many days during December, January, on many days for the 29 to Feb. 1, Feb. 15-17, Mar. 3-6. Temperatures given for these periods are 1954 to September 1955 given in WSP 1387. 5, 6, 1955; minimum, freezing point 2, 21, 1953, July 6, 7, Aug. 1, 80°F June 20, during winter months.

REWARKS --Stream frozen Dec. 8, 9, 15-18, Jan. 13-15, Jan. MARKS --Stream frozen of discharge for water year October Maximum, February, and March. EXTREMES, 1953-55.--Water temperatures: EXTREMES, 1954-55. --Water temperatures:

Temperature (°F) of water, water year October 1954 to September 1955

### AU SABLE RIVER AT MIO, MICH.

LOCATION. --Temperature recorder at gaging station, 150 feet upstream from bridge on State Highway 33 at Mio, Oscoda County, 10 miles downstream from mouth.

RECORDS ANALABLE. -- Water temperatures: July 1952 to September 1955.

EXTREMES 1954-55. -- Water temperatures: Maximum, 777 F Aug. 4; minimum, 33°F on many days during December, January, February and March.

EXTREMES 1954-55. -- Water temperatures: Maximum, 777 F Aug. 4; minimum, 32°F Jan. 8, 1953.

EXTREMES 1952-55. -- Water temperatures: Maximum, 777 F Aug. 4; minimum, 32°F Jan. 8, 1953.

EXTREMES -- Stream frozen Dec. 7; 8, 20-22, Jan. 26-29, Feb. 3, 4, 23. Temperatures given for these periods are for the underflow. Records of Alsoharge for water year October 1954 to September 1955 given in WSP 1387.

1 Temperature (°F) of water, water year October 1954 to September 1955 9

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	July	min	65	88	89	2	2	17	7	7	73	72	72	2	2	2	69	10	2	2.6	2 2	7.1	72	73	2	=	7.1	69	69	69	20	12	20
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	June	upu	58	28	5	62	63	64	65	65	65	85	64	64	19	ŝ	28	99	61	200	6 5	68	89	65	49	ខ	63	62	62	63	65	!	63
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order	nber	min	37	38	37	36	36	36	36	35	35	33	33	33	8	* :	45	34	8	200	3 %	34	34	33	33	33	33	33	33	35	34	34	8
Rec	December	max	38	38	38	38	37	36	98	36	35	35	35	34	\$ 3	£ :	34	34	34	8 8	2. 2.	34	\$	34	33	33	33	33	34	32	34	34	35
ı	mber	min	43	42	41	41	41	40	40	40	41	42	42	42	7	41	41	41	41	# 5	42	43	43	42	42	4	40	39	39	39	38	:	41
	November	max	#	43	42	41	41	41	4	41	42	42	42	27	2,5	7.	41	41	42	2,0	‡ <b>\$</b>	43	43	<b>3</b>	42	42	41	40	38	38	39		42
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	oto0	xeu	99	26	26	24	26			23	21	20		25		<b>X</b> :	8	23	22	200	46	45		47	48	48	49	49	49	48	48	46	51
	Dog	, cay	1	2	3	4	5	6	7	8	9.	10	11	12	13	14	et	16	17	19	20.	21	22	23	24	25	26	27	28.	29.	30.	31	Average

EAST BRANCH AU GRES RIVER AT MCIVOR, MICH.

LOCATION.--Temperature recorder at gaging station, 25 feet downstream from highway bridge at McIvor, losco County, 1.1 miles east of National City, and 9 miles southwest of Tawas City.

DRAINGE AREA.--84 agarae miles.

RECORDS ANALLABLE.--Water temperatures: October 1951 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 75°F July 9, 10, Aug. 1, 2; minimum, freezing point on many days during December, January,

February and March.

EXTREMES, 1951-55. -Water temperatures: Maximum, 75°F June 25, 1952, July 9, 10, Aug. 1, 2, 1955; minimum, freezing point on many days during winter months. REMARKS.-Stream frozen Dec. 5 to Mar. 16. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955

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ust	min	88	2 5	9	200	2 0	8 6	90	62	64	2	63	83	\$ 5	20	64	65	99	68	69	20	92	9	62	65	63	63	63	99	20	65
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11	min	38	2.5	9 9	04	2 5	2 6	9 6	£ 14	45	47	47	47	47	2	46	\$ 4	42	47	46	49	47	47	46	45	48	ಜ	25	51	:	42
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February	max	32	32	32	2 5	9 6	200	70	3 6	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	1	1	:	32
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AU GRES RIVER NEAR NATIONAL CITY, MICH.

LOCATION.—Temperature recorder at gaging station, 20 feet downstream from highway bridge, 1½ miles upstream from Elm Creek, 4 miles southwest of Tawas City, and 15½ miles upstream from mouth.

DRAINGE AREA.—166 Square miles.

EXCRORDS AREALABLE.—Water temperatures: October 1951 to September 1955.

EXTREMES, 1954-55.—Water temperatures: Maximum, 84°F Aug. 1, 4; minimum, freezing point on many days during December, January, February and March.

EXTREMES, 1951-55.—Water temperatures: Maximum, 84°F Aug. 1, 4, 1955; minimum, freezing point on many days during the winter months.

EXTREMES, 1951-55.—Water temperatures: Maximum, 84°F Aug. 1, 4, 1955; minimum, freezing point on many days during the winter months.

October 1954 to September 1955 given in MSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955 Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph7

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a Includes estimated temperature, 32°F, on missing day.

### HOUGHTON CREEK NEAR LUPTON, MICH.

of LOCATION .--Temperature recorder at gaging station, half a mile upstream from mouth, 3 miles downstream from Wilkins Creek, and 3 miles southwest

Lupton, Ogemaw County.

DAALNGAR ARRA. "27 square miles, approximately.

BRANNGAR ARRA. "27 square miles, approximately.

EXTREMES, 1954-55.—Water temperatures: Maximum, 68°F July 1, 440. 1; minimum, freezing point on many days during December, January, and February.

EXTREMES, 1954-55.—Water temperatures: Maximum, 68°F July 1, 640. 1, 1952; minimum, freezing point on many days during winter months.

EXTREMES, 1956-55.—Water temperatures: Maximum, 69°F July 2, 1952; minimum, freezing point on many days during winter months.

EXTREMENS, 1956-55.—Water temperatures in Maximum, 69°F July 1, 60°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F July 1, 10°F Jul

Temperature (°F) of water, water year October 1954 to September 1955

[Recorder with temperature attachment continuous ethal alcohol-actuated thermograph]

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## RIFLE RIVER AT "THE RANCH" NEAR LUPTON, MICH.

LOCATION .--Temperature recorder at gaging station, a quarter of a mile downstream from Houghton Creek, and 3 miles southwest of Lupton,

Ogemaw County.
DRAINAGE AREA.-54 square miles, apportantely.
RECORDS AVAILABLE.-Water temperatures: July 1950 to September 1955.
EXPREMES, 1954-55.--Water temperatures: Maximum, 72 F July 5, 6, 9, Aug. 1; minimum, freezing point on many days during December, January,

during winter months.
REMAKKS.--Stream frozen Dec. 20-23, Jan. 20, 21, Jan. 27 to Feb. 7, Feb. 11-18, Mar. 7, 8, 19. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387. and Pebruary. EXTREMES, 1950-55. --Water temperatures: Maximum, 72°F June 25, 26, 1952, July 5, 6, 9, Aug. 1, 1955; minimum, freezing point on many days

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph/ Temperature (°F) of water, water year October 1954 to September 1955

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Santomber		min	26	54	25	55	57	25	: 2	3 5	70	21	72	53	20	2	3 2	3	22	5.	5.7	-	5 6	200	26	52	2	53	23	51	40	::	20	53	22	25	:
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October		max m	26	22	21	29	24	25	40	2 9	0	25	25	22	55	7		0	22	2	40	2 0	2 5		2	51	5	25	23	25	20	-	2	46	46	46	44
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	Dav	2	1	2	3	4	5	9	7			A	10	11	12.	97		7	15	16.	17	18		14	20	21	22	23	24	25	26	22		28	29	30	31

### PRIOR CREEK NEAR SELKIRK, MICH

LOCATION. -- Temperature recorder at gaging station, a quarter of a mile upstream from mouth, half a mile downstream from Ammond Creek, and 1½ miles

MARIAGE REAL-19 square miles, approximately.

RECHIS AVAILABLE.—Water temperatures: Maximum, 76°F Aug. 1; minimum, freezing point on many days during December, January, February, and March.

EXTREMES, 1950-55.—Water temperatures: Maximum, 76°F Aug. 1; minimum, freezing point on many days during winter months.

EXTREMES, 1950-55.—Water temperatures: Maximum, 76°F Aug. 1, 1955; minimum, freezing point on many days during winter months.

EXTREMES, 1950-55.—Water temperatures is morphis.

EXTREMES, 1950-55.—Water temperatures is morphis.

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EXTREMES, 1950-55.—Water temperatures.

EXTREMES, 1950-55.—Water temperatures.

EXTREMES, 1950-55.—Water temperatures.

Temperature (°F) of water, water year October 1954 to September 1955 Recorder with temperature attachment. continuous ethyl alcohol-actuated thermograph?

					٢)	Recorder	ME	temperature attachment,	re attac	- 1	continuous etnyi			Factuat	alcohol-actuated thermograph,	nograp	< I							
Ď.	Octob	oper	Nove	November	Dec	December	January	lary	February	ary	March	_ _	April		May	_	June	_	July	-	August	ıst	September	per
200	max	min	max	min	max	min	max	min	max	min	max m	ii	max m	mtn m	max m	min	max	min	max n	min	max	min	max	min
1	28	25	40	39	37	36	32	32	32	32	32	_	44	_	59	-		;	73	67	76	02	61	57
2	24	22	41	40	36	32	32	32	32	32	32	_	46		28	-	<u>-</u>	26	11	99	22	. 89	5 6	24
3	28	22	41	38	35	34	32	32	32	32	32		45		92		. ~	24	69	25.	22	69	9	. 40
4	61	28	41	40	34	34	32	32	32	32	32		44		64	_	90	9	2	64	74	99	9	20.02
2	28	23	41	40	34	34	32	32	32	32	32	32	43	36	61	52 6	99	62	23	69	74	3 2	3 8	90
6	23	49	41	40	34	34	32	32	32	33	33			_	24		_			90	5		- 1	r.
7	49	45	42	41	34	34	32	32	32	32		-		37	- 22	_	- «	3 8	2 2	9 9	7 9	9 9	20	3 6
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9.	20	47	42	40	34	34	32	32	32	32	32		21	40	49	_		2 2	74	. 89	25.0	3 45	3 4	25
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22	20	46	41	40	32	32	32	32	32	32			_	_	59	_	99	. 19	2	67	. 62	89	2.5	4
23.	24	48	40	38	32	32	32	32	32	32	-				61	_	_	28	27	69	89	62	20	25
	23	20	38	38	32	32	35	32	32	32		_	-		64	_	_	22	69	94	æ	24	92	22
	23	20	39	38	32	32	32	32	32	32	33		_	45	63	99	0	26	99	29	99	09	29	25
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28	46	43	38	38	32	32	32	32	32	32		_		_		_		26	2	64	64		20	51
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31	43	40	:	:	32	32	32	32		-	4	4	+	-	+	-	1	;	72	67	25	90	:	
Average	25	49	41	39	33	33	32	32	32	32	33	_						29	2	65	89	64	28	54

RIFLE RIVER AT SELKIRK, MICH.

LOCATION: --Temperature recorder at gaging station at upstream side of highway bridge at Selkirk, Oegmaw County, and 1½ miles downstream from DRAINGE REEK. -110 square miles.

BRAINGE REEK. --110 square miles.

EKCONGS ARIALBEE. --Water temperatures: October 1950 to September 1955.

EKCONGS ALAILABEE. --Water temperatures: Maximum, 78° F Aug. 1; minimum, freezing point on many days during December, January, February, and March.

EKTREMES, 1950-55. --Water temperatures: Maximum, 78° F Aug. 1; minimum, freezing point on many days during winter months.

EKTREMES, 1950-55. --Water temperatures; Maximum, 78° F Aug. 1, 1955; minimum, freezing point on many days during winter months.

EKTREMES, -Stream frozen Dec. 5-8, 13, 14, 19-25, 30, Jan 8, Jan 14 to Feb. 20, Feb. 24, 25, Mar. 5-9, Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in wSP 1387.

r 1955	thermograph/
to Septembe	nol-actuated
1954	alcol
Temperature ("F) of water, water year October 1954 to September	nt, continuous ethyl alcohol-actuated thermograph
of water, wate	attachment, c
rature ('F) (	temperature
Tempe	ecorder with temperature attachment

	. ,						ŀ	
mber	min	58 57 57 60	52 52 54 54 54 54	54 50 53 53	55 59 60 58	53 54 51	50 52 52 54 11	54
September	max	63 62 63 64 65	62 56 54 58	55 53 54 57	98888	55 55 55 55	53 57 55 55	28
August	min	02 99 89 89 69	67 68 59 59	62 62 62 62 62	63 65 65 65	68 63 59 61	63 62 62 63 65 60	45
Aug	max	78 74 72 75	70 72 58 68 68	69 69 65 65	07 172 173 07	77 73 69 64	96 62 98 98 98 98	66
July	min	66 65 66 68	69 67 68 68	64 63 63 68	64 63 66 66	67 69 64 61	64 63 68 68	99
15	max	76 72 70 76 76	76 75 72 76	72 71 72 72	68 68 72 74 75	75 76 77 70	E E E E E E E E E E E E E E E E E E E	73
June	min	57 58 59 60 63	64 61 61 60	59 54 52 52	64 64 65 65	65 62 58 57	58 59 65 65	90
2	max	65 64 69 69	69 58 67 66	63 59 57 62 67	57 17 17 57 67 17 18 18 18 18 18 18 18 18 18 18 18 18 18	73 62 64 63	65 66 70 72	29
, A	min	55 55 50 53	50 55 46 48	52 52 52 53 53	50 50 50 53	28 88 82	54 51 58 56 55	54
May	max	64 64 64 61	58 56 50 49	54 59 61 62	60 65 65 63	64 62 64 61	60 63 62 64	90
	min	38 39 39 40	40 33 42 46	47 48 50 49 49	48 49 49 47	46 49 48 48	46 49 51 53 52	46
April	max	2 4 4 4 4 8 8 4 4 8 8 8 8 8 8 8 8 8 8 8	443 443 523	51 51 51 52 52	51 55 50 50	45 54 45 84 48 53 44 48	54 56 59 60	20
	min	33 4 34	33 23 33	<b>4</b> 8 8 8 8 8	33 33 33	32 32 32 32 32	33  35 36 37	33
March	max	38 88 88	383335	3 3 4 4 8	33 35 37	334 33	34 40 42	35
ary	mim	333333	33333	33333	32222	322 32 32 32 32 32	33	32
February	max	32 32 32 33 33 33 33 33 33 33 33 33 33 3	32223	32233	32 32 33 33 33 33 33 33 33 33 33 33 33 3	322233	34 34	32
January February	mim	34 4 8 3 3 3 3 4 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5	33 23 33	322333	32222	32233	322 332 332 332	33
January	max	34 35 35 35	33 35 35 35 35 35 35 35 35 35 35 35 35 3	33 33 34	32 32 32 33 33 33 33 33 33 33 33 33 33 3	32 32 32 32 32	32 32 32 32 32	33
: [	min	35 35 35	32222	32238	22 23 23 22 23 23 24	32223	32 32 33 33 33	33
December	max	88888	32223	36 32 34 34	324 44 83 33 33 33 33 33 33 33 33 34 35 35 35 35 35 35 35 35 35 35 35 35 35	322233	35 35 33 33 33 34	34
aper	min	64646	39 40 39 39	04 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	39 44 45 45 45	44 39 40 40	33 33 3	<b>\$</b>
November	max	22324	24444	2444	44 44 45 45 45 45	84 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	39 39 39 39	42
Je .	幅	5 4 5 5 5	48 46 47 50	51 54 53 53	48 44 44 44	45 48 48 49	44 44 45 43 43	49
Octobe	max	55 57 58 58	53 49 47 50 51	56 55 55	51 48 47 46	49 49 52 52 51	50 49 47 46 46 43	51
	Day	23. 23. 24. 35. 44. 35. 44. 35. 44. 35. 44. 45. 45. 45. 45. 45. 45. 45. 45. 4	6. 7. 8 9. 10.	11. 12. 13. 14.	16. 17. 18. 19. 20.	21. 22. 23. 24.	26. 27. 28. 29. 30.	Average

## WEST BRANCH RIFLE RIVER NEAR SELKIRK, MICH.

LOCATION.--Temperature recorder at gaging station, half a mile downstream from Campbell Creek, 3½ miles upstream from mouth, 4 miles southwest of Selkirk, Ogemaw County, and 6½ miles southeast of town of West Branch.
DRAINGER AREA.-52 square miles, approximately.
RECORDS AVAILABLE.-5 square temperatures: Max 1932 to September 1955.
EXTREMES, 1954-55.--Water temperatures: Maximum, 78°F July 4, 6, 9, Aug. 1, 4; minimum, freezing point on many days during December, January, February,

THEMES, 1952-55. --Water temperatures: Maximum, 78°F June 20, 21, 1953, July 4, 6, 9, Aug. 1, 4, 1955; minimum, freezing point on many days during winter months. and March.

REMARKS. -Stream frozen Dec. 3-11, Dec. 14 to Mar. 10. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

1955	thermograph
water year October 1954 to September	inuous ethyl alcohol-actuated
Temperature (°F) of water, water year	corder with temperature attachment,
	æ,

		E	90	28	28	29	62	29	58	55	28 22	57	53	53	57	22	28	61	64	62	57	57	23	3 6	3	21	25	<b>2</b> 5	22	22	:	57
	September	min	64	4	2	9	9			_	28		œ	28	6		ıç i	- 0		<u> </u>	63	0 9	20	2 5		9	4		-	24	-	62
	Sel	max	L	_		_		_		_		_								_	_	_					_	_			4	4
	August	min	7.1	F	72	F	72	-2	7		65 62	- 6	Z	- 63	9	 8	9	5 6		02	-	F ?	5 6	5 6	ś 	<u>.</u>		<b>2</b>	9	67	و	67
	Ψ	max	78	92	75	28	77	94	75	2	69	- 12	69	89	67	2	7	2 2	2	12	77	9 1	2 5	9	s —	88	99	99	2	- 2	6	72
	July	nin	69	69	89	2	12	11	5	2	7.1	67	64	63	65	<u>و</u>	89	800	98	67	69	69	2 %	8	70	65	72	67	65	99	2	89
-	2	max	76	74	75	78	77	78	77	16	78	73	12	72	73	55	72	2.5	£ 5	12	76	9 1	e 6	2 5	2	74	74	74	73	4.	75	74
اجا	يو ا	min	26	26	9	63	49	99	67	64	63	69	8	26	54	22	99	65	99	67	89	65	19	8 2	8	26	26	61	64	67	:	62
thermograph/	June	max	99	67	99	2	72	11	12	89	69	67	63	90	63	67	20	2 5	3 52	74	73	2	62	\$ 3		65	67	2	2	73	:	68
d ther	A	mim	55	21	22	9	28	52	22	25	7 <del>4</del> 4	46	20	54	25	54	26	25	70	54	55	28	5	07		26	20	63	28	92	22	55
actuate	May	max	63	62	67	- 62	64	9	9	28	2 S	, <u>1</u> 5	8	62	62	2	63	9 :	64	63	25	64	4.5	00	ř	09	63	65	64	62	49	62
alcohol	ח	min	40	41	42	42	42	40	37	38	42	64	200	20	20	21	48	6 4	8 4	48	46	20	6.0	2 2	ř	46	49	22	72	53	:	47
s ethyl	April	max	45	46	46	45	43	43	43	44	222	15	22	75	22	24	54	21	ž is	48	54	26	2.5	6 6	P T	54	29	61	62	63	1	52
ntinuon	45	min	32	32	32	32	32	32	32	32	3 22	. 6	32	32	33	33	32	35	30	34	34	83	3 3	4. 6	22	33	33	33	34	36	38	33
nent, co	March	max	32	32	32	32	32	32	32	32	32	: 2	33	34	34	34	33	ee :	36	36	35	34	* i	60	33	34	35	37	40	42	43	34
attachn	ary	nin	32	32	32	32	32	32	32	32	3 32		325	32	32	32	32	32	3 62	32	32	32	32	2 6	32	32	32	32	;	1	;	32
Recorder with temperature attachment, continuous ethyl alcohol-actuated	February	max	32	32	32	32	32	32	32	32	3 22	: 2	32	32	35	3.5	32	35	3.5	32	32	32	22.5	32	32	32	32	32	;	1	:	32
h temp	ary	min	32	35	32	32	33	33	33	35	3 32	. 25	325	32	35	32	32	32	3 68	32	32	32	32	35	35	32	32	32	32	32	32	32
der wit	January	max	32	32	32	33	33	34	33	33	3 33	8	32	32	32	32	32	33	2 62	32	32	32	32	22.0	32	32	32	32	32	32	32	32
Recon	ber	min	35	33	32	32	32	32	32	32	32	. 8	32	32	35	32	32	32	3 22	32	32	32	325	22	32	32	32	32	32	32	32	32
	December	max	36	32	33	33	32	32	32	32	32		3 88	32	32	32	32	32	3 62	35	32	32	32	22.0	32	32	32	32	32	32	32	32
	ber	min	38	39	37	39	38	39	39	39	38	8 8	8 8	37	39	37	37	9 9	2 4 4 2	42	40	39	37	2 6	8	37	37	36	36	36	:	38
	November	max	9	40	9	40	40	41	41	42	42	: 4	41	40	41	38	41	43	6.4	4	42	40	33	200	8	38	38	37	37	37	:	40
	ber	min	28	26	22	28	72	20	46	46	84.0	. 65	2 99	24	54		47	46	4.2	£.	45	45	4.1	200	£	48	47	43	45	43	40	20
	Octo	max	69	28	28	9	90	25	20	48	2 22	95	28	24	57	25	51	7- 1	48	4	49	49	22	23	52	25	21	47	46	45	43	25
		L		:	:	:	:	-	-	:	: :				:	:	:	<u> </u>		:	_	:	:	:	:	:	:	:	:	:	<u>ا</u> ۔	
	Dov.	3			:	:	:	:	:	:							:	:					:	:			:	:		:		Average
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				~	က	4	r.		~	œ	6 0	1	12	13	14	12	16.		9 6	20	21.	22	23	4, 5	53	26.	27	82	53	30	3.	

### STREAMS TRIBUTARY TO LAKE ERIE

## MAUMEE RIVER AT WATERVILLE, OHIO

LOCATION. --At gaging station at bridge on State Highway 64 at Waterville, Lucas County, 3 miles downstream from Tontogany Creek. RAINGE REA.--6, 314 square mailes. Panalles. Records Avillable. --Chemical analyses: March 1950 to February 1952.

Sediment records: April 1960 to September 1955.

EXTREMES, 1964-65.—"Water temperatures: Maximum, 90°F July 27, Aug. 3-5; minimum, freezing point on many days during December, January, and February. Sediment concentrations: Maximum and 1970 ppm Mar. 13; minimum daily, 1 ppm Sept. 18-19.

Sediment Loads: Maximum daily, 1,070 ppm Mar. 13; minimum daily, 1 ppm Sept. 18-19.

EXTREMES, 1950-55.—"Water temperatures: Maximum, 90°F July 22, 1952, July 27, Aug. 3-5, 1955; minimum, freezing point on many days during some wither months.

Sediment concentrations: Maximum daily, 2,240 ppm Mar. 26, 1954; minimum daily, 1 ppm on many days during October to December 1953, and September 1955. Sediment loads: Maximum daily, 142,000 tons Mar. 26, 1954; minimum daily, less than 0.5 ton on several days during October to December 1953, and

REMANKS. --Temperature recorder on downstream side of second pier from left end of bridge. Low flow slightly regulated by power plants above station. Records of discharge for water year October 1954 to September 1955 given in WSP 1387. Flow affected by ice Jan. 30 to Feb. 15, Feb. 22, 23. September 1955.

Temperature (°F) of water, water year October 1954 to September 1955

	nber	min	71	69	8	69	22	69	89	99	65	20	2	64	64	99	69	2	73	72	25	74	68	8	8 6	9	;
İ	September	max	92	92	75	92	92	92	75	11	72	74	73	20	2	2	72	73	7.5	22	22	75	7.	69	66	2.2	:
1	ıst	min	82	84	98	87	87	82	82	28	78	79	80	18	72	2	72	92	7.	48	8	8	81	80	20 1	5 4	<u>-</u>
	August	max	88	8	8	6	8	87	82	82	£	81	81	80	82	22	28	46	٤	83	81	88	82	82	8	3 &	 ;
	July	min	12	92	8	8	8	82	82	81	83	18	78	7.2	£	82	62	79	ę.	8	8	8	83	83	400	2 6	:
	Ju.	max	64	84	22	83	84	98	84	8	82	84	81	80	8	83	81	80	83	83	8	83	98	81	22	£ 48	;
1	June	nim	89	2	2	11	92	92	74	12	11	71	11	2	89	67	6	72	75	1,1	82	62	82	74	4.	7 2	<u>!</u>
/uda	, Ju	max	72	22	92	82	62	62	92	74	72	17	71	71	7	8	72	92	7.8	80	81	8	83	62	æ £	9.5	:
continuous ethyl alcohol-actuated thermograph/	P.	min	09	62	65	99	67	65	99	63	61	9	9	62	64	63	6	62	51	63	65	99	67	88	2 2	: :	:
ated the	May	max	62	25	99	89	8	88	67	99	63	62	63	29	99	65	65	19	64	67	67	20	112	7	73	* 65	:
ol-actu	Ŧ	uju	42	44	42	46	47	20	49	48	49	51	53	23	22	22	57	26	23	29	29	20	29	9	8	200	;
yl alco	April	max	44	46	4	47	20	51	51	49	51	\$	54	22	24	28	8	28	29	29	8	8	61	5	5 6	2 6	;
ious eth	сþ	min	37	39	\$	\$	4	40	8	37	36	37	39	42	45	47	47	46	35	4	43	43	4	42	9 9	\$ 6	;
	March	max	39	40	4	\$	<b>\$</b>	41	4	33	æ	39	42	42	47	4	4	47	45	45	#	44	45	42	2 :	3 4	;
hment,	ıary	min	32	32	32	32	32	32	33	33	33	33	33	33	83	83	ຮູ	33	33	88	88	32	32	32	2 2	3 8	;
re atta	February	max	32	32	35	33	32	32	33	33	33	33	33	83	33	33	æ	33	63	33	83	33	32	35	8	3 5	;
Recorder with temperature attachment,	January	upu	36	36	38	98	37	38	39	39	88	38	37	36	36	32	34	33	33	83	8	33	32	32	223	3 %	}
with te	Jan	max	36	38	38	37	38	39	g	33	8	88	88	37	36	36	32	34	33	33	ee	33	33	35	22	3 8	;
corder	December	nim	37	98	<u>چ</u>	32	34	33	33	32	35	33	33	g	8	8	88	34	33	8	8	32	32	35	25 25	2 6	; 
Œ,	Dece	max	88	31	98	33	32	34	33	32	33	33	33	33	33	33	*	34	33	8	34	8	32	8	25 25	2 %	; —
	November	uju	45	4	£	45	42	42	45	43	44	\$	44	44	44	45	44	43	53	2	45	47	45	4	£:	3 4	:
i	Nove	max	47	42	4	43	43	42	43	44	44	44	44	42	45	46	42	44	77	45	47	42	47	42	4:	3 4	:
	October	uju	69	2	=	7	99	64	8	62	6	62	62	8	63	65	6	61	23	26	<u>z</u>		23	22	25	3 2	;
	oct	max	7.2					_	62	_	_	_	_	63	_	_	_		91		u,			u,		. 45	;
	Dav	in the second	1	2	3	4	5	8	7	8	6	10	11	12	13	14	15	16	17.	18	19	20	21	22	23.	25	

26	22	54	43	42	33	32	35	35.	32	35	42	40	-85	22	11	20	16	- 02	88	8	8	- 91	- 29	63
27	22	22	42	41	34	32	32	32	36	35	40	88	22	26	72	69	28	20	06	84	8	28	64	62
28	22	93	41	40	32	34	35	35	37	36	39	37	28	26	72	72	80	7.1	87	82	42	82	99	64
29	23	21	40	39	32	34	35	35	;	;	40	38	29	22	72	7	-62	73	84	81	82	12	99	63
30.	21	49	68	88	36	32	35	35	;	;	42	33	9	28	71	67	78	74	98	82	8	77	89	65
31	49	47	1	:	36	36	32	32	;	1	42	4	1	:	69	99	1	;	88	84	11	74	:	:
Average	15	29	#	43	34	33	32	34	33	33	42	41	22	54	89	65	92	7.2	84	81	83	19	72	89

### ST. LAWRENCE RIVER BASIN

### STREAMS TRIBUTARY TO LAKE ERIE--Continued

### MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			nueu seurm	ll water ye		1004 to Septi	I I I I I I I I I I I I I I I I I I I		
1		October			November		<u> </u>	December	
		Suspende	d sediment	ll	Suspende	d sediment	۱	Suspende	d sediment
Day	Mean	Mean		<b>M</b> ean	Mean		Mean	Mean	
Day	dis-	concen-	Tons	dıs-	concen-	Tons	dis-	concen-	Tons
	charge	tration	per	charge	tration	per	charge	tration	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(mqc)	day
1-	294	21	17	920	19	47	0.550	105	9 710
1	304	28		1,310	16	56	9,550 7,770	71	2,710
2	285		23				7,770		1,490
3		18	14	889	13	31	5,550	67	1,000
4	370	18	18	1,220	9	30	3,990	45	485
5	1,280	53	183	796	8	17	3,440	37	344
_					_		l		
6	5,730	59	913	1,070	9	26	2,590	31	217
7	9,150	78	1,930	988	4	11	2,200	25	148
8	8,750	115	2,720	904	9	22	1,610	20	a 85
9	6, 460	138	2,410	1,830	12	59	1,480	18	a70
10	5,380	125	1,820	1,230	11	a 35	2,050	14	77
}		\	'	}}		}	1	1	
11	8,350	120	2,700	1,270	10	34	1,380	20	74
12	12, 900	185	6, 440	1,310	12	42	954	25	64
13	19,200	289	15,000	874	14	33	1,160	25	78
14	23,400	348	22,000	954	14	36	920	20	50
15	31,100	440	36,900	971	12	31	971	18	47
16	32,500 29,700	605	53,100 32,500	751	22	45	812	15	33
17	29,700	405	32,500	681	18	33	971	15	39
18	21,300	230	13,200	920	15	37	1,060	15	a 45
19	15,600	147	6, 190	780	17	36	1,060	13	a 35
20	11,400	110	3, 380	2,400	23	149	904	12	29
			.,	,					
21	8,950	87	2,100	3,560	27	260	1,350	12	44
22	6, 640	67	1,200	3,620	27	264	1,330	9	32
23	5, 380	60	872	2,930	20	158	1, 130	3	9
24	3, 200	52	449	3,080	17	141	1,110	3	9
25	2,420	42	274	3, 230	23	200	1,000	4	11
1	-,			1,			1 -,	_	
26	2,390	35	226	3,810	22	226	937	8	20
27	1,900	34	174	5,910	30	479	1,160	3	9
28	1,610	28	122	5,380	34	494	7,590	16	s 439
29	1,720	28	130	8,750	43	1,010	17,400	230	s11,600
30	1,400	26	98	10, 200	64	1,760	23,400	487	30,800
31	1, 220	20	66				21, 300	271	15,600
31	1, 220	20	66				21,300	271	15,600
Total.	1, 220 280, 283			72, 538		5,802	21, 300 128, 129		15, 600 65, 693
31	1, 220	20	66				21,300	271	15,600
Total.	1, 220 280, 283	20  January	66 207, 169	72,538	 February	5,802	21,300 128,129	271  March	15,600 65,693
Total.	1, 220 280, 283 17, 400 16, 800	20	66 207, 169 8, 550			5,802 8 5	21, 300 128, 129 31, 800 35, 500	271 	15, 600 65, 693 44, 200 53, 500
1	1, 220 280, 283 17, 400 16, 800	20  January 182 138	66 207, 169 8, 550 6, 260	72, 538 950 900	February 3 2	5,802 8 5	21, 300 128, 129 31, 800 35, 500	271  March 515 558	15, 600 65, 693 44, 200 53, 500
1 2	1, 220 280, 283 17, 400 16, 800 16, 200	20  January 182 138 145	8, 550 6, 260 6, 340	72, 538 950 900 850	February	5,802 8 5	21, 300 128, 129 31, 800 35, 500 31, 100	271  Narch 515 558 570	15, 600 65, 693 44, 200 53, 500 47, 900
1 2 4	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400	20  January 182 138	8,550 6,260 6,340 3,980	72, 538 950 900 850 800	February 3 2 7	5,802 8 5	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500	271  March 515 558	15, 600 65, 693 44, 200 53, 500 47, 900
1 2 4	1, 220 280, 283 17, 400 16, 800 16, 200	January 182 138 145 110	8,550 6,260 6,340 3,980 3,350	950 900 850 800 900	February 3 2 7 8	5,802 8 5 16 17	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900	271  Narch 515 558 570 612 931	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000
1 2 4	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400	January 182 138 145 110	8,550 6,260 6,340 3,980 3,350	72, 538 950 900 850 800	February 3 2 7 8	5,802 8 5 16 17 36	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900	271  Narch 515 558 570 612 931	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000
1 2 4	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800	January 182 138 145 110 100	8,550 6,260 6,340 3,980 3,350	950 900 850 800 900	February 3 2 7 8 15	5,802 8 5 16 17	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900	271  Norch 515 558 570 612	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000
1 2 3 4 5	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400	January 182 138 145 110 100	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900	72, 538 950 900 850 800 900 650 700 850	February 3 2 7 8 15	5,802 8 5 16 17 36	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900	271  N * r ch 515 558 570 612 931 1,050	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800
12345	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900	January 182 138 145 110 100 188 408	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700	72, 538 950 900 850 800 900 650 700	February 3 2 7 8 15	5,802 8 5 16 17 36 16 11	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900	271  Norch 515 558 570 612 931 1,050 705	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300
12345678	1, 220 280, 283 17, 400 16, 800 13, 400 12, 400 24, 800 33, 900 33, 200	January 182 138 145 110 100 188 408 512	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700	72, 538 950 900 850 800 900 650 700 850	 February 3 2 7 8 15 9 6	5,802 8 5 16 17 36 16 11 11	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900	271  Narch 515 558 570 612 931 1,050 705 468	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300
1 2 3 4 5 8 9	1, 220 280, 283 17, 400 16, 800 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900	20  January 182 138 145 110 100 188 408 512 363 187	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700 10,000	72, 538 950 900 850 800 900 650 700 850 800 950	February 3 2 7 8 15 9 6 5 5 5	5,802 8 5 16 17 36 16 11 11 11 13	31,800 35,500 31,100 32,500 41,900 40,300 28,300 19,900 13,400	271  Norch 515 558 570 612 931 1,050 705 468 340 275	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950
1	1, 220 280, 283 17, 400 16, 800 13, 400 12, 400 24, 800 33, 900 24, 800 33, 900 19, 900 15, 000	20  January 182 138 145 110 100 188 408 512 363 187	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700 10,000	72, 538 950 900 850 800 900 650 700 850 800 950	February 3 2 7 8 15 9 6 5 5 5	5,802 8 5 16 17 36 11 11 11 13 552	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400	271  h**rch 515 558 570 612 931 1,050 705 468 340 275	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 76, 700 35, 800 18, 300 9, 950 6, 770
1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 15, 000 11, 900	20  January 182 138 145 110 100 188 408 512 363 187 128 92	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700 10,000 5,180 2,960	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500	February 3 2 7 8 15 9 6 5 5 16	5,802 8 5 16 17 36 16 11 11 11 13 52 68	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400	271  N**rch 515 558 570 612 931 1,050 705 468 340 275 220 398	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 76, 700 35, 800 18, 300 9, 950 8, 770 8 25, 700
1	1, 220 280, 283 17, 400 16, 800 13, 400 13, 400 24, 800 33, 900 24, 800 33, 900 28, 300 19, 900 15, 000 11, 900 9, 750	20  January 182 138 145 110 100 188 408 512 363 187 128 92 76	8,550 6,260 6,340 3,380 3,350 12,600 37,300 45,900 27,700 10,000 5,180 2,960 2,000	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000	February 3 2 7 8 15 9 6 5 5 16 10 7	5,802 8 5 16 17 36 16 11 11 13 52 68 76	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100	271 N**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 s 25, 700 69, 600
Total  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 24, 800 33, 900 33, 200 28, 300 19, 900 15, 000 11, 900 9, 750 6, 270	January 182 138 145 110 100 188 408 512 363 187 128 92 76 70	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700 5,180 2,960 2,960 1,180	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100	February 3 2 7 8 15 9 6 5 5 16 10 7 11	5,802 8 5 16 17 36 16 11 11 11 13 52 68 76 92	21,300 128,129 31,800 35,500 31,100 32,500 41,900 45,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 24,100 16,200	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 825, 700 69, 600 31, 500
1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 15, 000 11, 900	20  January 182 138 145 110 100 188 408 512 363 187 128 92 76	8,550 6,260 6,340 3,980 3,350 12,600 37,300 45,900 27,700 10,000 5,180 2,960	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500	February 3 2 7 8 15 9 6 5 5 16 10 7	5,802 8 5 16 17 36 16 11 11 13 52 68 76	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400	271 N**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 76, 700 35, 800 18, 300 9, 950 8, 770 8 25, 700
Total.  1	1, 220 280, 283 17, 400 16, 800 16, 800 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730	20 January 182 138 145 110 100 188 408 512 363 187 128 92 76 70 55	66 207, 169 8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 37, 300 27, 700 10, 000 5, 180 2, 960 2, 960 1, 180 851	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12	5,802 8 5 16 17 36 16 11 11 11 13 52 68 76 92 81	21,300 128,129 31,800 35,500 31,100 32,500 41,900 45,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 24,100 16,200 11,700	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 900 19, 900 11, 900 11, 900 9, 750 6, 270 5, 730	20 	8,550 6,280 6,240 3,980 3,350 12,600 37,300 45,900 27,700 10,000 5,180 2,960 2,000 1,180 407	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 550 2, 230	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12	5,802 8 5 16 17 36 16 11 11 13 52 68 76 92 81	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 9, 150	271 N**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 900 33, 900 19, 900 11, 900 6, 270 5, 730 3, 140	20	66 207, 169 8, 550 6, 280 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 960 2, 960 2, 960 1, 180 851	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 330 2, 330	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12 19 12	5,802 8 5 16 17 36 18 11 11 11 13 52 68 92 81 114 95	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 11, 700 9, 150 7, 580	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 35, 800 18, 300 9, 950 6, 770 825, 700 69, 600 31, 500 18, 600 9, 760 5, 400
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 3, 470	20 January 182 138 145 110 100 188 408 512 363 187 128 92 76 70 55 48 44 48	66 207, 169 8, 550 6, 280 6, 340 3, 380 12, 600 27, 700 10, 000 5, 180 2, 980 2, 980 2, 980 2, 980 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 930 3, 900	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12 19 12 12	5,802 8 5 18 17 36 16 11 11 13 52 68 76 92 81 114 95 126	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 9, 150 7, 580 7, 200	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810
Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 5, 730 6, 270 5, 730 3, 470 2, 370 3, 3, 470 2, 370	20	66 207, 169 8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 37, 300 45, 900 27, 700 10, 000 5, 180 2, 960 2, 960 2, 180 851 407 282 337 186	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 500 2, 930 3, 900 5, 380	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 15	5,802 8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 126 126	21,300 128,129 31,800 35,500 31,100 32,500 41,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 9,150 7,580 7,580 7,580 5,730	271  N rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 155, 000 130, 000 130, 000 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 3, 470	20 January 182 138 145 110 100 188 408 512 363 187 128 92 76 70 55 48 44 48	66 207, 169 8, 550 6, 280 6, 340 3, 380 12, 600 27, 700 10, 000 5, 180 2, 980 2, 980 2, 980 2, 980 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 4, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5, 180 5	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 930 3, 900	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12 19 12 12	5,802 8 5 18 17 36 16 11 11 13 52 68 76 92 81 114 95 126	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 9, 150 7, 580 7, 200	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 5, 730 5, 730 3, 140 2, 370 3, 140 2, 370 1, 850	20	66 207, 169 8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 960 2, 900 1, 180 851 407 282 337 166 105	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270	February 3 2 7 8 15 9 6 5 5 16 10 7 11 12 19 12 12 15 26	5,802 8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 126 128 440	21,300 128,129 31,800 35,500 31,100 32,500 41,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 17,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580 7,580	271  \$\since{\gamma_{\text{rrch}}}\$ 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 113, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 470 2, 370 2, 370 1, 850	20 January 182   138   145   110   100   188   408   512   363   187   128   92   76   70   55   48   44   36   26   21   17	66 207, 169 8, 550 6, 280 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 960 2, 960 2, 980 1, 180 851 407 287 287 287 287 287 287 287 287 287 28	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 330 3, 900 5, 270 11, 400	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 12 12 16 108	5,802 8 5 16 17 36 18 11 11 11 13 52 68 76 92 81 114 126 126 218 440 3,320	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 11, 700 9, 150 7, 580 7, 200 5, 730 4, 530 5, 550	271  h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100	15, 600 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 1, 220
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 5, 730 6, 270 5, 730 3, 140 2, 370 3, 140 2, 370 1, 850 1, 850	20 	66 207, 169 8, 550 6, 280 6, 340 3, 350 12, 600 27, 700 10, 000 5, 180 2, 980 2, 990 1, 180 851 407 285 337 166 105	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000	February  3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 15 26	5,802 8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 126 218 440 3,320 7,130	21,300 128,129 31,800 35,500 31,100 32,500 41,900 45,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 11,700 9,150 7,580 7,580 4,530 5,550 5,550 10,800	271  \$^\\rac{515}{558} 5570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 148 100 86 163	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 1, 220
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 33, 900 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 2, 370 2, 370 2, 370 1, 850	20	66 207, 169  8, 550 6, 280 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 980 2, 000 1, 180 851 407 282 337 166 105 74 53 86	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 530 3, 900 5, 380 6, 270 11, 400 15, 000 21, 000	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 3558	5,802 8 5 16 16 11 11 11 13 52 68 76 92 81 114 95 128 440 3,320 7,130 20,300	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 11, 700 9, 150 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 15, 600	271 h*rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 130, 000 35, 800 18, 300 9, 950 6, 770 825, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 4, 750 10, 500
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 800 12, 400 12, 400 24, 800 33, 900 33, 200 28, 300 11, 900 9, 750 6, 270 6, 270 5, 730 3, 470 2, 370 1, 850 1, 610 1, 520 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 610 1, 6	20	66 207, 169  8, 550 6, 260 6, 340 3, 350  12, 600 27, 700 10, 000 5, 180 2, 000 1, 180 851  407 282 337 166 105 74 53 86 103	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000 21, 000 16, 800	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 15 26 108 176 358 236	5,802 8 5 16 17 36 16 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 9, 150 7, 580 7, 200 5, 730 4, 530 10, 800 11, 600 16, 800 16, 800	271 h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 4, 750 10, 500 15, 000
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 2, 370 2, 370 2, 370 2, 370 1, 850	20	66 207, 169  8, 550 6, 280 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 980 2, 000 1, 180 851 407 282 337 166 105 74 53 86	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 530 3, 900 5, 380 6, 270 11, 400 15, 000 21, 000	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 3558	5,802 8 5 16 16 11 11 11 13 52 68 76 92 81 114 95 128 440 3,320 7,130 20,300	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 11, 700 9, 150 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 15, 600	271 h*rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 130, 000 35, 800 18, 300 9, 950 6, 770 825, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 4, 750 10, 500
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 800 113, 400 12, 400 24, 800 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 2, 370 2, 370 1, 850 1, 610 1, 520 1, 610 1, 130	20	66 207, 169  8, 550 6, 280 6, 340 3, 980 3, 350  12, 600 37, 300 45, 900 27, 700 10, 000 5, 180 2, 980 2, 000 1, 180 2, 980 1, 180 2, 980 1, 180 2, 980 1, 180 337 166 105 74 53 86 103 46	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 390 5, 380 6, 270 11, 400 15, 000 21, 000 16, 800 12, 600	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 15 26 108 176 358 236 130	5,802 8 5 16 17 36 18 11 11 11 13 52 68 76 92 81 114 114 95 128 218 240 3,320 7,130 20,300 10,700 4,420	21,300 128,129 31,800 35,500 31,100 32,500 41,900 45,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 11,700 9,150 7,580 7,200 5,730 4,530 5,550 10,800 12,900	271  h**rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254	15, 600 65, 693  44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 4, 750 10, 500 8, 850
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 12, 301 11, 850 1, 610 1, 520 1, 610 1, 130 1, 130 1, 200	20	66 207, 169 8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 960 2, 960 2, 180 851 46, 105 105 105 105 105 105 105 105 105 105	72, 538 950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000 21, 000 12, 600 11, 200	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 12 12 12 15 26 108 176 358 236 130	5,802  8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 128 440 3,302 7,130 20,300 10,700 14,420 2,630	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 40, 300 28, 300 19, 900 11, 400 22, 000 24, 100 16, 200 9, 150 7, 280 5, 730 4, 530 5, 550 10, 800 12, 900 10, 200 11, 800 12, 900 10, 200	271  h Trch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254	15, 690 65, 693  44, 200 53, 500 47, 900 53, 700 150, 000 130, 000 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 220 1, 220 1, 220 1, 220 1, 220 1, 250 16, 500 8, 850 5, 230
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 9, 750 6, 270 5, 730 3, 140 2, 370 3, 470 2, 370 1, 850  1, 610 1, 520 1, 810 1, 130 1, 120 1, 180	20	66 207, 169  8, 550 6, 280 6, 340 3, 980 3, 350  12, 600 37, 300 45, 900 27, 700 10, 000 5, 180 2, 960 2, 900 1, 180 851 407 482 337 166 105 74 53 86 103 46 366 29	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 330 3, 900 5, 380 6, 270  11, 400 15, 000 11, 200 14, 400	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 358 236 130	5,802  8 5 16 16 11 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700 4,420 2,630 3,110	21,300 128,129 31,800 35,500 31,100 32,500 41,900 45,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 17,580 7,580 7,580 7,580 7,580 7,580 7,580 10,800 15,600 16,800 16,800 16,900 10,200 7,770	271  h*rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254	15, 690 65, 693 44, 200 53, 500 47, 990 53, 700 105, 000 130, 000 130, 000 18, 300 9, 950 6, 770 8, 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 1, 220 1, 220 1, 220 1, 500 15, 000 8, 850 5, 31, 100
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 12, 370 3, 140 2, 370 3, 140 2, 370 1, 850 1, 670 1, 130 1, 200 1, 130 1, 200 1, 130	20  January  182  138  145  110  100  188  408  512  76  70  55  48  44  36  21  17  13  19  21  15	66 207, 169  8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 27, 700 10, 000  5, 180 2, 960 2, 960 1, 180 46, 900 1, 180 651 105 74 53 86 103 86 103 86 29	72, 538  950 900 850 800 900 650 700 855 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270  11, 400 15, 000 21, 000 16, 800 12, 600  11, 200 11, 200 11, 200 14, 400 24, 100	February  3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 15 26 108 176 358 236 130 87 80 385	5,802  8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700 4,420 2,630 3,110 25,000	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 12, 900 10, 200 7, 770 10, 200 7, 770 10, 200 7, 770 10, 200 7, 770 10, 200 7, 770 10, 200 7, 770 10, 200 7, 770 8, 550	271  \$\frac{5}{5}68 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254 190 148 115	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 1, 220 1, 220 1, 220 1, 230 3, 100 1, 720
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 15, 000 11, 900 2, 370 3, 470 2, 370 3, 470 2, 370 1, 850  1, 610 1, 520 1, 810 1, 180 954 5560	20	66 207, 169  8, 550 6, 240 3, 980 3, 350 12, 600 27, 700 10, 000 5, 180 2, 960 2, 000 1, 180 851 407 282 337 166 103 46 36 29 26 8	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000 12, 600 11, 200 14, 400 24, 100	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 358 236 130 87 80 385	5,802  8 5 16 16 11 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700 4,420 2,630 3,110	21,300 128,129 31,800 35,500 31,100 32,500 41,900 40,300 28,300 19,900 13,400 11,400 22,000 24,100 16,200 7,580 7,580 7,200 5,730 4,530 5,550 10,800 12,900 10,200 7,770 5,550 5,030	271  h rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254 190 148 115 88	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 130, 000 18, 300 9, 950 6, 770 s 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 290 1, 220 1, 220 1, 220 5, 850 5, 230 3, 100 1, 720 1, 720 1, 720
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 300 19, 900 11, 900 11, 900 12, 400 11, 500 11, 500 11, 500 11, 500 11, 500 11, 610 11, 670 11, 670 11, 670 11, 130 11, 200 11, 130 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11,	20	66 207, 169  8, 550 6, 260 6, 340 3, 350 12, 600 37, 300 27, 700 10, 000 5, 180 2, 960 2, 000 1, 180 337 166 105 74 53 86 103 46 36 29 6 8 6	72, 538  950 900 850 800 900 650 700 855 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270  11, 400 15, 000 21, 000 16, 800 12, 600  11, 200 11, 200 11, 200 14, 400 24, 100	February  3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 15 26 108 176 358 236 130 87 80 385	5,802  8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700 4,420 2,630 3,110 25,000	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 17, 580 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 12, 900 10, 200 7, 770 5, 550 5, 030 6, 820	271  \$\frac{515}{558} 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254 190 148 115 88 76	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 31, 500 18, 600 3, 810 2, 290 1, 220 4, 750 10, 500 15, 000 8, 850 5, 230 3, 100 1, 720 1, 200 1, 400
Total.  Total.  1	1, 220 280, 283  17, 400 16, 800 16, 200 16, 200 13, 400 12, 400 24, 800 33, 900 33, 200 28, 300 19, 900 11, 900 11, 900 2, 370 3, 470 2, 370 3, 470 1, 850 1, 610 1, 520 1, 180 954 560 750	20	66 207, 169 8, 550 6, 260 6, 340 3, 980 3, 350 12, 600 27, 700 45, 900 27, 700 10, 700 11, 180 851 407 282 337 1166 105 74 53 86 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 103 46 46 103 46 103 46 46 103 46 46 46 46 46 46 46 46 46 46 46 46 46	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 230 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000 21, 000 12, 600 11, 200 14, 400 24, 100	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 358 236 130 87 80 385	5,802  8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 128 440 3,300 20,300 10,700 4,420 2,630 3,110 25,000	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 11, 400 22, 000 24, 100 16, 200 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 12, 900 10, 200 7, 770 5, 550 5, 030 6, 820 9, 355	271  ***rch 515 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254 190 148 115 88 76 76	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 18, 300 9, 950 6, 770 s 25, 700 69, 600 31, 500 18, 600 9, 760 5, 400 3, 810 2, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 220 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200 1, 200
Total.  Total.  1	1, 220 280, 283 17, 400 16, 800 16, 200 13, 400 12, 400 24, 800 33, 900 33, 300 19, 900 11, 900 11, 900 12, 400 11, 500 11, 500 11, 500 11, 500 11, 500 11, 610 11, 670 11, 670 11, 670 11, 130 11, 200 11, 130 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11, 200 11,	20	66 207, 169  8, 550 6, 260 6, 340 3, 350 12, 600 37, 300 27, 700 10, 000 5, 180 2, 960 2, 000 1, 180 337 166 105 74 53 86 103 46 36 29 6 8 6	72, 538  950 900 850 800 900 650 700 850 800 950 1, 200 2, 500 4, 000 3, 100 2, 500 2, 930 3, 900 5, 380 6, 270 11, 400 15, 000 12, 600 11, 200 14, 400 24, 100	February 3 2 7 8 15 9 6 5 5 5 16 10 7 11 12 19 12 12 12 15 26 108 176 358 236 130 87 80 385	5,802  8 5 16 17 36 16 11 11 11 13 52 68 76 92 81 114 95 128 218 440 3,320 7,130 20,300 10,700 4,420 2,630 3,110 25,000	21, 300 128, 129 31, 800 35, 500 31, 100 32, 500 41, 900 45, 900 40, 300 28, 300 19, 900 13, 400 11, 400 22, 000 24, 100 16, 200 17, 580 7, 580 7, 200 5, 730 4, 530 5, 550 10, 800 12, 900 10, 200 7, 770 5, 550 5, 030 6, 820	271  \$\frac{515}{558} 558 570 612 931 1,050 705 468 340 275 220 398 1,070 720 590 395 264 196 148 100 86 163 249 330 254 190 148 115 88 76	15, 690 65, 693 44, 200 53, 500 47, 900 53, 700 105, 000 130, 000 76, 700 35, 800 18, 300 9, 950 6, 770 8 25, 700 69, 600 31, 500 18, 600 31, 500 18, 600 3, 810 2, 290 1, 220 4, 750 10, 500 15, 000 8, 850 5, 230 3, 100 1, 720 1, 200 1, 400

s Computed by subdividing day. a Computed from estimated concentration graph.

### MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April		l	May	o september	1933	June	
			J 0040-4	<del> </del>		3 3 4			d - a dimensi
	Mean		d sediment	Mean		d sediment	Mean		sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dıs-	Mean	Tons
	charge	concen- tration	per	charge	concen-	per	charge	concen- tration	per
	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day	(cfs)	(ppm)	day
1	9,350	82	2,070	3,470	93	871	858	22	51
2	8,750	84	1,980	2,200	73	434	573	13	20
3	7,390	77	1,540	2,200	62	368	460	6	7
4	5,380	73	1,060	1,810	60	293	472	9	11
5	4,530	69	844	2,010	55	298	709	10	19
6 7	3,440 2,640	72 75	669 535	1,110	45 40	135 a 150	460 508	15 10	19 14
8	2, 450	54	357	1,420 988	35	93	1,180	30	96
9	2, 150	40	232	709	30	57	2,060	36	200
10	1,760	37	176	1, 250	32	108	1,640	35	155
11	1,360	30	110	1,810	32	156	1,500	44	178
12	2,020	30	164	904	38	93	1,950	57	300
13	2,530	38	260	812	35	77	1,740	45	211
14	2,480 2,930	48 74	321 585	695 765	37 34	69 70	1,740 1,310	41 43	193 152
10	2, 930	14	565	103	34	'0	1,310	40	132
16	4,370	81	956	737	32	64	1,310	43	152
17	3,930	68	722	508	24	33	1,060	30	86
18	3,870	53	554	1,110	24	72	842	22	50
19	3,900	54	569	1,070	16	46	971	25	66
20	5,200	65	913	858	8	18	1,060	27	77
21	5 700	66	1 000	0.017	_	9	050	20	35
21 22	5,730 5,200	58	1,020 814	667	5 6	7	653 472	20 20	35 25
23,	3,710	56 54	541	449 460	9	11	342	23	21
24	6,090	71	s1,360	586	7	11	352	17	16
25	16, 200	314	s 15, 300	709	10	19	278	20	15
	· '			1					
26	18,600	800	40,200	1,040	23	64	270	21	15
27	13,900	504	18,900	1,110	30	90	262	17	12
28	10,400	302	8,480	971	25	66	278	8	6
29	7,200	187	3,640	889	25	60	278	.7	5
30 31	4,860	126	1,650	534	18	26 31	495	14	19
Total.	170 000		100 500	723	16		00 000		2, 226
_ rotar.	172, 320		106,522	34,574		3,899	26,083	I	4, 440
		July			August			September	
1	612	24	40	612	34	56	225	19	12
2	332	24 17	15	612 737	34 33	56 66	168	19 17	12 8
2	332 285	24 17 12	15 9	737 599	34 33 28	56 66 45	168 162	19 17 12	12 8 5
2 3 4	332 285 270	24 17 12 7	15 9 5	737 599 709	34 33 28 28	56 66 45 54	168 162 198	19 17 12 20	12 8 5 11
2 3	332 285	24 17 12	15 9	737 599	34 33 28	56 66 45	168 162	19 17 12	12 8 5
2 3 4 5	332 285 270 278	24 17 12 7 6	15 9 5 4	737 599 709 534	34 33 28 28 25	56 66 45 54 36	168 162 198 204	19 17 12 20 42	12 8 5 11 23
2 3 4	332 285 270 278	24 17 12 7 6	15 9 5 4 26	737 599 709 534 653	34 33 28 28 25 33	56 66 45 54 36	168 162 198 204	19 17 12 20 42	12 8 5 11 23
2	332 285 270 278	24 17 12 7 6	15 9 5 4 26 50	737 599 709 534 653 534	34 33 28 28 25 33 32	56 66 45 54 36 58 46	168 162 198 204 192 180	19 17 12 20 42 22 12	12 8 5 11 23
2	332 285 270 278 371 547 723 737	24 17 12 7 6 26 34 66 52	15 9 5 4 26	737 599 709 534 653 534 534 2, 240	34 33 28 28 25 33	56 66 45 54 36 58 46 59 345	168 162 198 204	19 17 12 20 42	12 8 5 11 23 11 6
2	332 285 270 278 371 547 723	24 17 12 7 6 26 34 66	15 9 5 4 26 50 129	737 599 709 534 653 534 534	34 33 28 28 25 33 32 41	56 66 45 54 36 58 46 59	168 162 198 204 192 180 146	19 17 12 20 42 22 12	12 8 5 11 23 11 6
2 3 4 5 6 7 8 9	332 285 270 278 371 547 723 737 534	24 17 12 7 6 26 34 66 52 48	15 9 5 4 26 50 129 103 69	737 599 709 534 653 534 534 2, 240 2, 500	34 33 28 28 25 33 32 41 57 60	56 66 45 54 36 58 46 59 345 405	168 162 198 204 192 180 146 138 210	19 17 12 20 42 22 12 15 18 17	12 8 5 11 23 11 6 6 7
2	332 285 270 278 371 547 723 737 534	24 17 12 7 6 26 34 66 52 48	15 9 5 4 26 50 129 103 69	737 599 709 534 653 534 534 2, 240 2, 500	34 33 28 28 25 33 32 41 57 60	56 66 45 54 36 58 46 59 345 405	168 162 198 204 192 180 146 138 210	19 17 12 20 42 22 12 15 18 17	12 8 5 11 23 11 6 6 7 10
2	332 285 270 278 371 547 723 737 534	24 17 12 7 6 26 34 66 52 48	15 9 5 4 26 50 129 103 69 66 129	737 599 709 534 653 534 534 2, 240 2, 500	34 33 28 28 25 33 32 41 57 60 49	56 66 45 54 36 58 46 59 345 405	168 162 198 204 192 180 146 138 210	19 17 12 20 42 22 12 15 18 17	12 8 5 11 23 11 6 6 7 10
2	332 285 270 278 371 547 723 737 534 521 723 1,390	24 17 12 7 6 26 34 66 52 48 47 66 62	15 9 5 4 26 50 129 103 69 66 129 233	737 599 709 534 653 534 534 2, 240 2, 500 1, 400 1, 060	34 33 28 28 25 33 32 41 57 60 49 45 58	56 66 45 54 36 58 46 59 345 405 185 132	168 162 198 204 192 180 146 138 210 210	19 17 12 20 42 22 12 15 18 17	12 8 5 11 23 11 6 6 7 10
2	332 285 270 278 371 547 723 737 534	24 17 12 7 6 26 34 66 52 48	15 9 5 4 26 50 129 103 69 66 129	737 599 709 534 653 534 534 2, 240 2, 500	34 33 28 28 25 33 32 41 57 60 49	56 66 45 54 36 58 46 59 345 405	168 162 198 204 192 180 146 138 210	19 17 12 20 42 22 12 15 18 17	12 8 5 11 23 11 6 6 7 10
2	332 285 270 278 371 547 723 737 534 521 723 1,390 695 981	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58	15 9 5 4 26 50 129 103 69 66 129 233 90	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 060 751 495	34 33 28 22 25 33 32 41 57 60 49 45 58 55 38	56 66 45 54 36 58 46 59 345 405 185 132 166 a 110 51	168 162 198 204 192 180 146 138 210 210 168 134 129 136	19 17 12 20 42 22 12 15 18 17 14 12 17 16	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4
2	332 285 270 278 371 547 723 737 534 521 723 1, 390 981	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58	15 9 5 4 26 50 129 103 69 66 129 233 90 154	737 599 709 534 653 534 534 2, 240 2, 500 1, 090 1, 060 751 495	34 33 28 28 25 33 32 41 57 60 49 45 58 55 38	56 66 45 54 36 58 46 59 345 405 185 132 166 a 110 51	168 162 198 204 192 180 146 138 210 210 168 134 129 136	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4
2	332 285 270 278 371 547 723 737 534 521 723 1,390 695 981 4,140 7,960	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 060 751 495 625 586	34 33 28 28 25 32 41 57 60 49 45 58 55 38	56 66 45 54 36 58 46 59 345 405 185 122 166 a 110 51	168 162 198 204 192 180 146 138 210 210 168 134 129 136 92	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 4
2	332 285 270 278 371 547 723 737 534 1,390 981 4,140 7,960 5,730	24 17 12 7 6 34 66 52 48 47 66 62 48 58	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720	737 599 709 534 653 534 534 2, 240 2, 500 1, 090 1, 090 1, 090 751 495	34 33 28 28 25 33 32 41 57 60 49 45 58 55 38	56 65 45 54 36 59 345 405 185 122 166 a 110 51	168 162 198 204 192 180 146 138 210 210 210 210 168 134 129 136	19 17 12 20 42 22 15 18 17 14 12 17 16 10	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t)
2	332 285 270 278 371 547 723 737 534 521 7,390 695 981 4,140 7,960 5,730 3,870	24 117 7 6 26 34 65 52 48 47 66 62 48 58 67 80 80 80	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804	737 599 709 534 653 534 534 2,240 2,500 1,400 1,080 751 495 625 586 495	34 33 28 28 25 33 41 57 60 49 45 58 55 38 34 28 30 27	56 66 65 45 54 36 59 345 405 132 166 a 110 51 57 44 40 20 28	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t)
2	332 285 270 278 371 547 723 737 534 1,390 981 4,140 7,960 5,730	24 17 12 7 6 34 66 52 48 47 66 62 48 58	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720	737 599 709 534 653 534 534 2, 240 2, 500 1, 090 1, 090 1, 090 751 495	34 33 28 28 25 33 32 41 57 60 49 45 58 55 38	56 65 45 54 36 59 345 405 185 122 166 a 110 51	168 162 198 204 192 180 146 138 210 210 210 210 168 134 129 136	19 17 12 20 42 22 15 18 17 14 12 17 16 10	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t)
2	332 285 270 278 371 747 723 737 534 521 723 1,390 695 981 4,140 5,730 3,870 3,870 3,870	24 17 12 7 6 26 34 65 52 48 47 66 62 48 58 67 77 78	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1, 720 804 712 276	737 599 709 534 653 534 534 2,240 2,500 1,400 1,080 751 495 625 586 495	34 33 28 28 25 32 41 57 60 49 45 58 55 38 30 27 21	56 66 65 45 54 36 59 345 405 132 166 a 110 51 57 44 40 20 28	168 162 198 204 198 204 180 146 138 210 210 168 134 129 136 92 95 95 95	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1	12 8 5 11 23 11 6 6 6 7 10 8 5 6 6 4 4 2 1 (t)
2	332 285 270 278 371 547 723 737 534 521 723 1,390 981 4,140 7,960 5,730 3,870 3,870 3,870	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58 67 80 77 78 80	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1, 720 1, 240 712 276	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 090 1, 050 751 495 625 586 495 380 285	34 33 28 28 25 33 32 41 57 60 49 45 58 58 58 38 28 20 27 21	56 65 54 36 58 48 39 345 405 185 122 166 a 110 28 16	168 162 198 204 192 180 146 138 210 210 210 168 134 129 136 92 95 107 107	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 2	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t) (t)
2	332 285 270 278 371 747 723 737 534 521 723 1, 390 695 981 4, 140 5, 730 3, 870 3, 870 904 874	24 17 12 7 6 26 34 65 52 48 47 66 62 48 58 67 77 78 65 37	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97	737 599 709 534 653 534 534 2, 240 2, 500 1, 400 1, 080 751 495 625 586 495 380 285	34 33 28 28 25 33 41 57 60 49 45 58 55 38 30 21 21 21	56 66 65 45 54 36 59 345 405 185 126 a 110 51 57 44 40 20 20 16	1 68 1 62 1 98 2 04 1 192 1 180 1 46 1 138 2 110 2 110 1 68 1 34 1 29 1 36 9 2 9 5 9 5 9 5 1 107 1 107 1 78 6 3 1 122	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17	12 8 5 11 23 11 6 6 6 7 10 8 5 6 6 6 4 2 1 (t) (t)
2	332 285 270 278 371 547 723 737 534 521 723 1, 390 981 4, 140 7, 960 5, 730 3, 3870 3, 3870 904 874	24 17 12 7 6 25 34 66 52 48 47 66 62 48 58 67 80 77 78 80 87 80 87 80 80 87 87 88	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 71,2 276 90 97	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 080 751 495 625 586 495 380 285 270 270 352 304	34 33 28 28 28 25 33 32 41 57 60 49 49 58 55 38 34 28 20 27 21 11 12 12	56 66 65 54 36 59 345 405 185 132 166 a 110 28 16 10 9 111	168 162 198 204 192 180 146 138 210 210 210 210 168 134 129 136 92 95 95 95 107 107 78 63 122 186	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 1 2 3 16 17 6	12 8 5 5 11 23 11 6 6 7 7 10 8 8 5 6 6 4 4 2 1 1 (t) (t) 1 1 3 6 6 3
2	332 285 270 278 371 747 723 737 534 521 723 1, 390 695 981 4, 140 5, 730 3, 870 3, 870 904 874	24 17 12 7 6 26 34 65 52 48 47 66 62 48 58 67 77 78 65 37	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97	737 599 709 534 653 534 534 2, 240 2, 500 1, 400 1, 080 751 495 625 586 495 380 285	34 33 28 28 25 33 41 57 60 49 45 58 55 38 30 21 21 21	56 66 65 45 54 36 59 345 405 185 126 a 110 51 57 44 40 20 20 16	1 68 1 62 1 98 2 04 1 192 1 180 1 46 1 138 2 110 2 110 1 68 1 34 1 29 1 36 9 2 9 5 9 5 9 5 1 107 1 107 1 78 6 3 1 122	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17	12 8 5 11 23 11 6 6 6 7 10 8 5 6 6 6 4 2 1 (t) (t)
2	332 285 270 278 371 547 723 737 534 521 723 1, 390 895 981 4, 140 5, 730 3, 870 3, 380 1, 570 904 874 874 599	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58 67 80 77 78 65 37 41 48 34	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1, 720 804 712 276 90 97 113 55	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 060 751 495 625 586 495 380 285 270 270 270 352 304 255	34 33 28 28 28 25 33 32 41 57 60 49 45 58 58 34 28 27 21 14 12 12 12	56 66 65 54 36 59 345 405 185 132 166 a 110 28 166 110 9 111 6	168 162 198 204 198 204 180 146 138 210 210 168 134 129 136 92 95 95 95 107 107	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2	12 8 5 11 23 11 6 6 7 7 10 8 8 5 6 6 4 2 2 1 (t) (t) 1 3 6 6 3 1
2	332 285 270 278 371 547 723 737 737 534 521 723 1, 390 981 4, 140 7, 960 5, 730 3, 870 3, 870 3, 870 904 874 874	24 117 7 6 24 34 65 52 48 47 66 62 48 80 77 78 80 80 80 87 41 41 43 42 43 44 45 46 47 48 48 48 48 48 48 48 48 48 48 48 48 48	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97 113 55 36	737 599 709 534 653 534 534 2,240 2,500 1,080 1,060 751 495 625 586 495 380 285 270 270 352 304 255 361	34 33 28 28 25 33 32 41 57 60 49 45 58 55 53 34 28 30 27 21 14 12 12	56 65 45 54 36 59 345 405 185 132 166 a 110 57 44 40 28 16	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 78 63 122 186 130	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 1 2 2 2 2 2	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t) (t) 1
2	332 285 270 278 371 547 723 737 534 521 723 1, 390 895 981 4, 140 5, 730 3, 870 3, 380 1, 570 904 874 874 599	24 17 12 7 6 26 34 66 52 48 47 66 62 48 58 67 80 77 78 65 37 41 48 34	15 9 5 4 26 50 129 103 69 66 129 233 90 154 7,720 1,720 1,240 804 712 276 90 97 113 55 36	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 080 751 495 625 586 495 380 285 270 270 270 362 361 495	34 33 28 28 25 32 41 57 60 49 45 55 38 30 28 30 27 21 14 12 12 14 9	56 66 45 54 36 58 46 59 345 405 185 122 166 a 110 51 57 74 44 40 20 21 16 11 11 11 6	168 162 198 204 198 204 180 146 138 210 210 210 168 134 129 136 95 95 95 95 107 107 107 78 63 122 186 130	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2	12 8 5 11 23 11 6 6 7 7 10 8 8 5 6 6 4 2 2 1 (t) (t) 1 3 6 6 3 1
2	332 285 270 278 371 747 723 737 534 521 723 1,390 695 981 4,140 695 981 4,140 874 874 874 874 874	24 17 12 7 6 26 34 65 52 48 47 66 62 48 58 67 77 78 65 37 41 48 34	15 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97 113 55 36	737 599 709 534 653 534 534 2,240 2,500 1,080 1,060 751 495 625 586 495 380 285 270 270 352 304 255 361	34 33 28 28 25 33 32 41 57 60 49 45 58 58 58 30 27 21 14 12 14 9	56 65 45 54 36 59 345 405 185 132 166 a 110 57 44 40 28 16	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 78 63 122 186 130	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2 3	12 8 5 5 11 23 11 6 6 6 7 7 10 8 5 6 6 6 4 2 2 1 (t) (t) 1 1 3 6 6 3 3 1 1 1 1 1
2	332 285 270 278 371 717 723 737 534 521 723 1, 390 981 4, 140 7, 730 3, 870 904 874 599 472 460 380 786 736	24 17 12 7 6 25 34 66 52 48 47 66 62 48 58 67 80 77 78 80 80 77 78 83 41 48 48 49 49 49 49 49 49 49 49 49 49 49 49 49	15 9 9 5 4 26 26 129 103 69 66 129 233 90 154 749 1,720 804 712 276 90 97 113 55	737 599 709 534 653 534 2, 240 2, 500 1, 060 1, 060 751 495 625 586 495 380 285 270 270 270 352 304 255	34 33 28 28 25 33 32 41 57 60 49 45 58 58 58 57 27 21 12 12 12 12 12 12 12 12 12 12 13 14 19	58 65 58 45 54 36 59 345 405 185 132 166 a 110 28 16 10 9 11 11 6	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 107 107 78 63 122 186 130	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 1 2 3 16 17 6 2 2 3 3 3	12 8 5 5 11 23 11 6 6 7 7 10 8 5 6 6 4 4 2 1 (t) (t) 1 1 3 6 6 3 1 1 1 1 1 1
2	332 285 270 278 371 547 723 737 737 534 521 723 1, 390 695 991 3, 870 3, 870 904 874 874 874 874 874 874 874 874 874 87	24 117 7 6 26 34 65 52 48 47 66 62 48 80 80 80 80 77 78 41 48 43 42 43 43 47 48 48 48 48 48 48 48 48 48 48 48 48 48	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97 113 55 36 87 27 22 27 87	737 599 709 534 653 534 534 2,240 2,500 1,400 1,060 751 495 625 586 495 380 285 270 270 352 304 255 361 495 361 495	34 33 28 28 25 32 41 57 60 49 45 58 55 38 34 28 30 27 21 14 12 12 14 12 12 14 12 16 16 16 16 16 16 16 17	56 66 45 54 36 58 46 59 345 405 185 132 166 a 110 51 57 44 40 20 9 11 11 16 6	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 107 107 107 107 107 107 107 107	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2 2 3 3 4 4	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t) (t) 1 1 1 1 1 1 1 1 1 2
2	332 285 270 278 371 717 723 737 534 521 723 1, 390 981 4, 140 7, 730 3, 870 904 874 599 472 460 380 786 736	24 17 12 7 6 25 34 66 52 48 47 66 62 48 58 67 80 77 78 80 80 77 78 83 41 48 48 49 49 49 49 49 49 49 49 49 49 49 49 49	15 9 9 5 4 26 26 129 103 69 66 129 233 90 154 749 1,720 804 712 276 90 97 113 55	737 599 709 534 653 534 2, 240 2, 500 1, 060 1, 060 751 495 625 586 495 380 285 270 270 270 352 304 255	34 33 28 28 25 33 32 41 57 60 49 45 58 58 58 57 27 21 12 12 12 12 12 12 12 12 12 12 13 14 19	58 65 58 45 54 36 59 345 405 185 132 166 a 110 28 16 10 9 11 11 6	168 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 107 107 107 107 107 107 107 107	19 17 12 20 42 22 12 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2 2 3 3 4 4 4	12 8 5 11 23 11 6 6 6 7 10 8 5 6 6 6 4 2 1 (t) (t) 1 1 3 6 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2	332 285 270 278 371 547 723 737 534 521 723 1,390 695 981 4,140 5,730 3,870 3,870 3,870 3,870 3,870 4,140 3,870 3,870 3,870 3,730 4,140 3,870 3,870 3,730 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,720 4,	24 117 7 6 26 34 65 52 48 47 66 62 48 80 80 80 77 78 65 37 41 48 48 22 22 23 37 43 46	15 9 9 5 4 26 50 129 103 69 66 129 233 90 154 749 1,720 1,240 804 712 276 90 97 113 55 36 27 22 27 88 86 17 87 87 87 87 87 87 87 87 87 8	737 599 709 534 653 534 534 2, 240 2, 500 1, 400 1, 080 751 495 625 586 495 380 285 270 270 270 352 304 255 381 495 380 382 495 383 384 495 385 380 285	34 33 28 28 25 32 41 57 60 49 45 58 55 38 34 28 30 21 14 12 12 14 9 12 18 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	56 66 45 54 36 58 46 59 345 405 185 132 166 a 110 51 17 44 40 20 18 18 18 18 18 18 18 18 18 18 18 18 18	188 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 78 63 122 186 130 130 146 130	19 17 12 20 42 22 15 18 17 14 12 17 16 10 8 5 1 1 2 3 16 17 6 2 2 3 3 4 4 4	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 4 2 1 (t) (t) 1 1 1 1 1 1 1 2 2 1 1 7 188, 202
2	332 285 270 278 371 547 723 737 534 521 723 1, 390 981 4, 140 7, 960 5, 730 3, 870 3, 870 3, 870 472 460 380 786 786 786 786 786 786 786 786 786 786	24 117 7 6 26 34 65 52 48 47 66 62 48 80 80 80 77 78 85 37 41 48 22 22 22 37 43 46 52	15 9 9 5 4 4 26 50 129 103 69 66 129 90 154 720 1, 720 1, 720 1, 720 90 97 113 55 36 27 22 28 8 8 16 7, 343 days)	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 060 751 495 625 586 495 380 285 270 270 270 352 304 255 361 495 380 353 363 363 363 363 363 363 363 363 363	34 33 28 28 25 33 32 41 57 60 49 45 58 55 38 34 28 30 27 21 14 12 12 12 14 9 12 18 16 25 33 32 41 45 45 45 45 45 45 45 45 45 45 45 45 45	56 65 45 54 36 59 345 405 185 132 166 a 110 57 44 40 00 28 16 10 11 11 11 16 16 16 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	188 162 198 204 192 180 146 138 210 210 168 134 129 136 95 95 95 107 107 107 78 63 122 186 130 129 146 146 147 147 147 147 148 148 148 148 148 148 148 148 148 148	19 17 12 20 42 22 15 18 17 14 12 217 16 10 8 5 1 1 2 3 16 17 6 2 2 3 3 4 4 4	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t) (t) 1 1 1 1 1 1 1 1 1 1 1 1 1
2	332 285 270 278 371 717 723 737 534 521 723 1,390 895 981 4,140 895 981 1,570 904 874 874 874 874 874 874 874 874 874 87	24 17 12 7 6 26 34 65 52 48 47 66 62 48 67 80 80 80 77 78 65 37 41 48 48 22 22 23 37 43 46 year (cfs (tons)	15 9 9 5 4 4 26 50 129 103 69 66 129 90 154 720 1, 720 1, 720 1, 720 90 97 113 55 36 27 22 28 8 8 16 7, 343 days)	737 599 709 534 653 534 2, 240 2, 500 1, 400 1, 090 1, 060 751 495 625 586 495 380 285 270 270 270 352 304 255 361 495 380 353 363 363 363 363 363 363 363 363 363	34 33 28 28 25 33 32 41 57 60 49 45 58 55 38 34 28 30 27 21 14 12 12 12 14 9 12 18 16 25 33 32 41 45 45 45 45 45 45 45 45 45 45 45 45 45	56 65 45 54 36 59 345 405 185 132 166 a 110 57 44 40 00 28 16 10 11 11 11 16 16 16 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	188 162 198 204 198 204 180 146 138 210 210 168 134 129 136 95 95 95 95 107 107 78 63 122 186 130 146 130 146 130 146 130 146 130 146 146 130 146 146 146 146 146 146 146 146 146 146	19 17 12 20 42 22 15 18 17 14 12 217 16 10 8 5 1 1 2 3 16 17 6 2 2 3 3 4 4 4	12 8 5 11 23 11 6 6 7 10 8 5 6 6 4 2 1 (t) (t) 1 1 1 1 1 1 1 1 1 1 1 1 1

a Computed from estimated concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

# MAUMEE RIVER AT WATERVILLE, OHIO -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B. bottom withdrawalt tube. D. decination: p. pjetette; S. steve; N. in native water; C. rehenically dispersed; M. mechanically dispersed)

		Methods of analysis	,	BSWCM	BSNM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM
			1,000												
			0.500												
			0.350												
		llimeters	0,250	100	100	8	;	100	66	100	001	100	100	;	:
		ize, in mi	0.125	86	66	66	100	66	86	66	8	66	66	201	:
(nae i		Percent finer than undicated size, in millimeters	0.062	97	97	86	66	66	97	66	86	66	86	66	8
ally Grope	ediment	ner than 11	0. 031	95	96	92	26	97	94	97	86	86	88	97	66
mechanic	Suspended sediment	ercent fir	0.016	06	86	16		92	92	93	91	92	94	96	6
sen' m'	ns	I	0.008	. 78	42	83	06	74	82	68	84	93	96	06	92
arish arsher			0.004	11	51	16	8	4	83	82	82	84	84	16	16
, chemica			0.003	49	41	25	73	8	20	76	73	75	72	26	62
in distilled water; c, chemically dispersed; in, mechanically dispersed		Concentration of suspension	analyzed (ppm)	1,270	1, 160	628	1,320	1,110	1,380	827	1,940	2,280	1,640	1,630	851
, III G		Concentration	of sample (ppm)	597	264	644	481	481	393	416	544	532	1,010	1,010	845
	Water	tem- per-	ature (°F)							_			_		
		Discharge (cfs)		32, 500	32, 500	33, 200	23,400	23, 400	34, 700	28, 300	37, 100	34.700	46,800	46,800	18, 600
		Time		12:45 a.m.	12:45 a.m.	8:00 a.m.	9:00 a.m.	9:00 a.m.	10:45 a.m.	11:20 a.m.	3:00 a.m.	2:45 p.m.	3:40 p.m.	3:40 p.m.	12:05 p. m.
	í	Date of collection		Oct. 16, 1954 12:45 a.m.	Oct. 16	Oct. 16	Dec. 30	Dec. 30	Jan. 7, 1955			Mar. 4	Mar. 6	Mar. 6	Apr. 26

### STREAMS TRIBUTARY TO LAKE ERIE--Continued PORTAGE RIVER AT WOODVILLE, OHIO

LOCATION .--At gaging station at bridge on U. S. Highway 20 in Woodville, Sandusky County. DRAINAGE AREA .--433 square miles. RECORDS AVAILABLE .--Water temperatures: September 1952 to September 1955.

Minimum, freezing point on several days

RECORDS AVAILABLE. -- water temperatures: September 1952 to September 1955.

Sediment records: October 1950 to September 1955.

Sediment records: October 1950 to September 1955.

EXTREMES, 1954-55. -- water temperatures: Maximum, 94°F Aug. 3; minimum, freezing point on several days during January and February.

Sediment concentrations: Maximum daily, 790 ppm Mar. 4; minimum daily, 1 ppm on many days during November to February, and June.

Sediment loads: Maximum daily, 10,200 tons Mar. 5; minimum daily, 0.1 ton on several days during November to February.

EXTREMES, 1950-55. -- water temperatures (1952-55): Minimum, freezing point on several day during December 1952, January and February 1955.

Sediment concentrations: Maximum daily, 1,210 ppm Mar. 12, 1952; minimum daily, 1 ppm on many days during October, December 1950, May, December 1952, January to Arril, November, December 1953, February, November, December 1954, January, February, and June 1955.

Sediment loads: Maximum daily, 27,900 tons Mar. 12, 1952; minimum daily, less than 0.6

Sediment loads: Maximum daily, 27,900 tons Mar. 12, 1952; minimum daily, less than 0.05 ton on many days during November 1951, November, December 1952, January, November 1953 to February 1954.

REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1387. Flow affected by ice Dec. 21-22, Jan. 16 to Feb. 9, Feb. 20-21.

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at approximately 4 p.m.7

Mar. Dec. Day Oct. Nov. Feb. Apr. June July Aug. Sept. --ĸΛ RΛ ----84 --Aver a 35 age

a Includes estimated temperature, 32°F, Feb. 11-16.

### ST. LAWRENCE RIVER BASIN

### STREAMS TRIBUTARY TO LAKE ERIE--Continued

### PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

		Suspe	nded sedim	circ, water ye	ar October	TOOT to bept	emmer 1900		
		October			November			December	
		Suspende	d sediment		Suspende	ed sediment		Suspende	d sediment
Day	Mean	Mean	T	Mean	Mean		Mean	Mean	
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge (cfs)	tration	per	charge	tration	per	charge	t ation	per
	(CIS)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	(ppm)	day
1	14	31	1.2	39	2	0.2	262	25	18
2	23	31	1.9	35	3	.3	202	14	7.6
3	28	43	3.2	35	2	a.3	166	12	5.4
4	21	35	2.0	40	ī	.1	143	10	3.9
5	19	50	2.6	50	Ž	.3	120	8	a3
		1	i	!!	_		i		
6	34	30	a3	112	18	a5	96	٦ ا	1.8
7	61	32	5.3	122	7	2.3	77	5	al
8 '	40	10	1.1	98	6	1.6	67	5	.9
9	31	17	1.4	. 77	5	1.0	70	4	.8
10	48	23	3.0	63	2	.3	72	2	.4
11	197	45	s 27	j	١ .	۱ .	ll	١ .	1 .
12	369	86	s 27 s 95	53 45	2 4	.3	71 57	2 2	.4
13	715	175	338			.5			a.3
14	790	196	s 457	43 41	5 5	.6	49 46	2	.3
15	2,360	360	2,290	40	6	a.6	50	3	.1
	2, 300	300	2,290	)) ***	, °	.6	) 50	1 3	.4
16	2,200	176	1,040	37	3	.3	54		h
17	1,290	95	331	35	i	.1	57		[]
18	815	66	145	35	5	.5	54		il
19	504	60	82	34	10	.9	55		ll .
20	298	58	47	34	8	a.7	44		e.3
				<b>[</b> ]				i	<b>11</b>
21	209	52	29	43	2	.2	45		
22	158	45	19	63	1	.2	40		[]
23	119	37	12	63	5	.8	37		U
24	93	24	6.0	58	7	1.1	44	2	.2
25	75	19	3.8	68	7	a 1	57	1	a.2
26	63	20	3.4	274	27	s 22	54	1	.1
27	61	17	a 3	334	35	32	57	l î	2
28	55	12	1.8	324	22	19	696	70	sb 280
29	52	ii	1.5	550	45	67	2,280	230	b1,400
30	48	4	.5	459	45	a 55	1,990	147	790
31	44	3	a.4	100			1,680	125	567
Total .	10,834						-		
			1 4 957 1	3 3∩4		2148	9 702		3 084 4
===	10,004	حتيك	4,957.1	3, 304		214.8	8,792	<u></u>	3,084.4
		January		3, 304	February	214.8		 March	
1	900	January 72	175	35	February 2	0.2	2,950	477	s 4, 100
2	900	January 72 81	175 262	35 35	February 2 2	0.2	2,950 3,130	477 340	s4, 100 s3, 120
2 3	900 1,200 1,140	January 72 81 94	175 262 289	35 35 40	February 2 2 1	0.2 .2 .1	2,950 3,130 1,440	477 340 155	s 4, 100 s 3, 120 603
2   3   4	900 1,200 1,140 690	January 72 81 94 71	175 262 289 132	35 35 40 35	February 2 2 1 1	0.2 .2 .1	2,950 3,130 1,440 2,980	477 340 155 790	s 4, 100 s 3, 120 603 s 7, 230
2 3	900 1,200 1,140	January 72 81 94	175 262 289	35 35 40	February 2 2 1	0.2 .2 .1	2,950 3,130 1,440	477 340 155	s 4, 100 s 3, 120 603
2	900 1,200 1,140 690 780	January 72 81 94 71 60	175 262 289 132 sb 160	35 35 40 35 35	February 2 2 1 1 1	0.2 .2 .1 .1	2,950 3,130 1,440 2,980 5,650	477 340 155 790 670	s 4, 100 s 3, 120 603 s 7, 230 10, 200
2	900 1,200 1,140 690 780 3,490	January 72 81 94 71 60 485	175 262 289 132 sb 160	35 35 40 35 35 35	February 2 2 1 1 1 1 2	0.2 .2 .1 .1 a.1	2,950 3,130 1,440 2,980 5,650 3,360	477 340 155 790 670	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300
2	900 1, 200 1, 140 690 780 3, 490 4, 250	January 72 81 94 71 60 485 309	175 262 289 132 sb 160 4,570 3,540	35 35 40 35 35 35	February 2 2 1 1 1 1 2 2 3	0.2 .2 .1 .1 a.1	2,950 3,130 1,440 2,980 5,650 3,360 1,380	477 340 155 790 670 253 160	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880	January 72 81 94 71 60 485 309 150	175 262 289 132 sb 160 4,570 3,540 a 750	35 35 40 35 35 35 35	February  2 2 1 1 2 3 5	0.2 .2 .1 .1 a.1	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665	477 340 155 790 670 253 160 95	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170
2	900 1, 200 1, 140 690 780 3, 490 4, 250	January 72 81 94 71 60 485 309	175 262 289 132 sb 160 4,570 3,540	35 35 40 35 35 35	February 2 2 1 1 1 1 2 2 3	0.2 .2 .1 .1 a.1	2,950 3,130 1,440 2,980 5,650 3,360 1,380	477 340 155 790 670 253 160	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596
2	900 1,200 1,140 690 780 3,490 4,250 1,880 990 690	January 72 81 94 71 60 485 309 150 84 54	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101	35 35 40 35 35 35 35 40 50 80	February  2 2 1 1 2 3 5 4 2	0.2 .2 .1 .1 a.1 a.1 .2 .3 .5 .5	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550	477 340 155 790 670 253 160 95 56 49	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73
2	900 1,200 1,140 690 780 3,490 4,250 1,880 990 690	January 72 81 94 71 60 485 309 150 84 54	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101	35 35 40 35 35 35 35 40 50 80	February  2 2 1 1 1 2 3 5 4	0.2 .2 .1 .1 a.1 .2 .3 .5 .5	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550	477 340 155 790 670 253 160 95 56 49	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690	January 72 81 94 71 60 485 309 150 84 54 38	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49	35 35 40 35 35 35 35 40 50 80	February 2 2 1 1 1 1 2 3 5 4 2 2	0.2 .2 .1 .1 a.1 .2 .3 .5 .5	2, 950 3, 130 1, 440 2, 980 5, 650 3, 360 1, 380 665 528 550 1, 530 3, 810	477 340 155 790 670 253 160 95 56 49 250 675	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1,640 6,940
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690 481 359 304	January 72 81 94 71 60 485 309 150 84 54 38 26	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16	35 35 40 35 35 35 35 40 50 80 407 715	February 2 2 1 1 1 1 2 3 5 4 2 2	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720	477 340 155 790 670 253 160 95 56 49 250 675 306	s 4, 100 s 3, 120 s 7, 230 10, 200 2, 300 596 170 80 73 s 1,640 6,940 s 1,500
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690 481 359 304 247	January 72 81 94 71 60 485 309 150 84 54 38 26 19	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16	35 35 40 35 35 35 35 40 50 80 407 715 346 236	February  2 2 1 1 1 2 3 5 4 2	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4 e20 e90 e25 e9	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720	477 340 155 790 670 253 160 95 56 49 250 675 306 153	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 306
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690 481 359 304	January 72 81 94 71 60 485 309 150 84 54 38 26	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16	35 35 40 35 35 35 35 40 50 80 407 715 346	February 2 2 1 1 1 1 2 3 5 4 2 2	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720	477 340 155 790 670 253 160 95 56 49 250 675 306	s 4, 100 s 3, 120 s 7, 230 10, 200 2, 300 596 170 80 73 s 1,640 6,940 s 1,500
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 690 690 481 359 481 359 247 198	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16 10 6.4	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177	February 2 2 2 1 1 1 1 2 3 5 5 4 2 2	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4 e20 e90 e25 e9	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 528 1,530 3,810 1,720 740 514	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 306 129
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690 481 359 304 247 198	January 72 81 94 71 60 485 309 150 84 54 54 19 112	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16 10 6.4	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177	February  2 2 1 1 1 2 3 5 4 2	0.2 .2 .1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 129 s 208
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 481 359 304 247 198	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 16 10 6, 4	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223	February  2 2 1 1 1 2 3 5 4 2 7	0.2 .2 .1 .1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93	\$ 4, 100 \$ 3, 120 \$ 603 \$ 7, 230 10, 200 2, 300 596 170 80 73 \$ 1,640 6,940 \$ 1,500 306 129 \$ 208 326
2	900 1, 200 1, 140 990 780 3, 490 4, 250 1, 880 990 690 481 359 304 247 198	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12	175 262 289 3132 sb160 4,570 3,540 a 750 224 101 49 25 16 10 6.4	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469	February  2 2 1 1 1 2 3 5 4 2 7 20	0.2 .2 .1 a.1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e3 e3	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 1,720 740 514	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93	\$4,100 \$3,120 \$603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 129 \$208 326 96
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 690 481 359 900 481 359 100 247 198 150 130 130 199 95	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 a 4 2.4 1.2	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665	Pebruary  2 2 1 1 1 2 3 5 4 2 7 20 35	0.2 .2 .1 .1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65	2,950 3,130 1,440 2,980 5,650 3,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 36
2	900 1, 200 1, 140 990 780 3, 490 4, 250 1, 880 990 690 481 359 304 247 198	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12	175 262 289 3132 sb160 4,570 3,540 a 750 224 101 49 25 16 10 6.4	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469	February  2 2 1 1 1 2 3 5 4 2 7 20	0.2 .2 .1 a.1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e3 e3	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 1,720 740 514	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93	\$4,100 \$3,120 \$603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 129 \$208 326 96
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 481 359 304 247 198 150 110 95 85	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 4 2.4 1.2 5 a 2.4	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665	Pebruary  2 2 1 1 1 2 3 5 4 2 7 20 35	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4 e20 e90 e25 e9 e3 e3 4.2 25 a65 a90	2,950 3,130 1,440 2,980 5,650 3,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 36
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 690 481 359 304 247 198 150 130 110 95 85	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 4 2.4 1.2 5 a 2.2	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750	Pebruary  2 2 1 1 1 2 3 5 4 2 7 20 35 45	0.2 .2 .1 .1 a.1 .2 .3 .5 .5 .4 e20 e90 e25 e9 e3 e3 4.2 25 a65 a90	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 129 s 208 326 96 36 a 18 sb 200 e 2, 600
2	900 1, 200 1, 140 990 780 3, 490 4, 250 1, 880 990 481 359 304 247 198 150 130 110 95 85	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 4 2.4 1.2 5 a 2.4	35 35 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680	February  2 2 1 1 1 2 3 5 4 2 7 20 35 45	0.2 .2 .1 a.1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 2.5 a.9	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 36 a18 \$200 e2,600 1,440
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 690 481 359 304 247 198 150 130 95 85 85 80 75 65 60	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2	175 262 289 132 sb160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 4 2.4 1.2 5 a 2.4 2.5 2.2 3.5 2.2 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 2177 172 223 469 665 750 2,500 2,680 1,850	February  2 2 1 1 1 2 3 5 5 4 2 7 7 20 35 45 45 47 256	0.2 .2 .1 a.1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 214	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 514 790 930 510 373 270	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60 25 60	s 4, 100 s 3, 120 s 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 129 s 208 326 96 36 a 18 sb 200 e 2, 600 1, 440 316
2	900 1, 200 1, 140 990 780 3, 490 4, 250 1, 880 990 481 359 304 247 198 150 130 110 95 85	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6,4 2,4 1,2 2,2 2,2 2,2 2,2	35 35 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680	February  2 2 1 1 1 2 3 5 4 2 7 20 30 45 374 256 374 216	0.2 .2 .1 .1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 36 a18 \$200 e2,600 1,440
2	900 1, 200 1, 140 690 780 3, 490 4, 250 690 41, 280 990 690 481 359 304 247 198 150 130 110 95 85 85 80 75 65 60 55	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2	175 262 289 289 35160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 a4 2.4 1.2 .5 a.2 .2 a.3 3.3	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,680 1,850 1,260 960	February  2 2 1 1 1 2 3 5 4 2 2 7 20 35 45 45 374 256 1163 49	0.2 .2 .1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 214	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 514 790 930 514 2,770 2,120 564	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60 252 130 67	s 4, 100 s 3, 120 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 326 96 36 129 s 208 326 96 36 18 sb 200 e 2, 600 1, 440 102
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 690 481 359 900 481 359 100 130 110 95 85 85 80 55 65	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2	175 262 289 132 sb 160 4,570 3,540 a 780 224 101 49 25 16 10 6.4 4 2.4 1.2 2.2 a.2 a.2 a.2	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680 1,850 1,260 790	February  2 2 1 1 1 2 3 5 5 4 2 7 7 0 35 45 45 45 49 40	0.2 .2 .1 a.1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 1,850 580 214 127	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270 834 2,770 2,120 900 564	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60  252 130 67	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 129 s 208 326 96 36 a 18 sb 200 e 2, 600 e 1, 440 316 102
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 990 481 359 304 247 198 150 130 110 95 85	January 72 81 94 71 60 4885 309 150 84 54 38 26 19 15 12 10 7 4 2 2 1 1 1 1 2 2 2 2	175 262 289 132 sb 160 4, 570 3, 540 a 750 224 101 49 25 6 10 6 .4 a 4 2 . 4 1 . 5 5 a . 2 2 . 2 a . 3 3 . 3	35 35 40 35 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680 1,260 960 1,540	Pebruary  2 2 1 1 1 2 3 5 5 4 2 7 20 30 345 374 256 63 49 40	0.2 .2 .1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 580 580 580 580 580 580 580 580	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270 834 2,770 2,120 900 564 400 250	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60  252 130 67	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 306 129 s 208 326 96 36 a 18 sb 200 e 2, 600 1, 440 316 102
2	900 1, 200 1, 140 690 780 3, 490 4, 250 1, 880 690 481 359 304 247 198 150 130 110 95 85 85 65 65 65 65 65 65 65	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2 2 2 2 2 2	175 262 289 132 sb160 4,570 3,540 a 750 224 101 49 25 16 10 6.4 a4 2.4 1.2 5 a.2 2 a.2 3 3 3 .2 2.2	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,580 1,850 1,260 960 790 1,540 2,680	February  2 2 1 1 1 2 3 5 4 2 7 7 20 35 45 374 256 1163 49 40 214	0.2 .2 .1 a.1 a.1 2.3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 1,850 580 214 127	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270 834 2,770 2,120 900 564 400 250	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 67 60  252 130 67	\$4,100 \$3,120 \$603 \$7,230 10,200 2,300 596 170 80,73 \$1,640 6,940 \$1,500 129 \$208 326 36 a18 \$b200 e2,600 1,440 316 102
2	900 1, 200 1, 140 990 780 780 990 4, 250 1, 880 990 481 359 990 690 481 359 150 130 110 95 85 80 75 65 65 65 65 55	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2 2 2 2 2 1	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6,4 a 4 2,4 1,2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	35 35 36 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680 1,260 980	7 205 45 216 63 49 40	0.2 .2 .1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 580 580 580 580 580 580 580 580	2,950 3,130 1,440 2,980 5,650 3,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270 834 2,770 2,120 900 564 400 250 168 329	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60 25 67 67 49	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 318 \$200 \$2,600 1,440 316 102 20 9.1 18
2	900 1, 200 1, 140 990 780 3, 490 4, 250 1, 880 990 690 481 359 304 247 198 150 130 95 85 85 80 75 65 60 55	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2 2 2 2 2 2	175 262 289 132 sb160 4,570 3,540 a 750 3,540 101 49 25 16 10 6.4 2.4 1.2 2.5 a.2 2.2 a.3 3.3 .2 2.2 a.1 a.1	35 35 40 35 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,580 1,850 1,260 960 790 1,540 2,680	February  2 2 1 1 1 2 3 5 4 2 7 7 20 35 45 374 256 1163 49 40 214	0.2 .2 .1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 580 580 580 580 580 580 580 580	2,950 3,130 1,440 2,980 5,650 3,360 1,380 665 528 550 1,530 3,810 1,720 740 514 790 930 514 790 930 514 400 250 168 329 1,000	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 67 45 60  252 130 67	s 4, 100 s 3, 120 603 s 7, 230 10, 200 2, 300 596 170 80 73 s 1, 640 6, 940 s 1, 500 129 s 208 326 36 a18 sb 200 e 2, 600 1, 440 316 102 a 50 9.1 18 8 240
2	900 1, 200 1, 140 990 780 780 990 4, 250 1, 880 990 481 359 990 690 481 359 150 130 110 95 85 80 75 65 65 65 65 55	January 72 81 94 71 60 485 309 150 84 54 38 26 19 15 12 10 7 4 2 1 1 1 1 2 2 2 2 2 2 1	175 262 289 132 sb 160 4,570 3,540 a 750 224 101 49 25 16 10 6,4 a 4 2,4 1,2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	35 35 36 40 35 35 35 35 40 50 80 407 715 346 236 177 172 223 469 665 750 2,500 2,680 1,260 980	7 205 45 216 63 49 40	0.2 .2 .1 a.1 2 .3 .5 .5 .4 e20 e90 e25 e9 e3 4.2 25 a65 a90 s2,820 1,850 580 580 580 580 580 580 580 580 580	2,950 3,130 1,440 2,980 5,650 3,380 665 528 550 1,530 3,810 1,720 740 514 790 930 510 373 270 834 2,770 2,120 900 564 400 250 168 329	477 340 155 790 670 253 160 95 56 49 250 675 306 153 93 92 130 70 36 25 60 25 67 67 49	\$4,100 \$3,120 603 \$7,230 10,200 2,300 596 170 80 73 \$1,640 6,940 \$1,500 306 129 \$208 326 96 318 \$200 \$2,600 1,440 316 102 20 9.1 18

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.
b Computed from partly estimated concentration graph.

### PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955 -- Continued

			- Commont,	water year O		to peptermee	1300		
		April		ļ	May			June	,
	Mean		d sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
	charge	concen- tration	per	charge	concen- tration	per	charge	concen-	per
	(cfs)	(ppm)	day	(cfs)	(ppm)	day	(cfs)	tration (ppm)	day
1	960		176	100			90		
2	604	68 43	70	127 103	17 26	5.8 7.2	26 21	6	0.4
3	407	36	40	92	20	5.5	17	6	.3
4	270	30	22	82	17	3.8	14	) š	i
5	198	22	12	75	17	3.4	14	6	a . 2
_			1						
6	184	18	8.9	71	16	a3	12	11	.4
7	163	13	5.7	61	15	2.5	12	16	.5
8	133	8	2.9	53	15	2.1	13	20	.7
9 10	108	6 4	1.7	44	10	1.2	16	17	.7
20	98	•	a 1	43	5	.6	16	18	.8
11	97	2	.5	45	6	a.7	22	20	1.2
12	110	4	1.2	52	10	1.4	21	18	a 1
13	131	6	2.1	42	13	al l	20	14	.8
14	123	3	ai	35	13	1.2	16	10	.4
15	207	16	sb 16	29	12	.9	15	6	. 2
16	000							_	_
17	336 218	50 13	b 45 7.6	25	15 15	1.0	14 12	5 4	a.2
18	218 165	9	4.0	21 19	13	a.8 .7	12	7	.1 .2
19	181	ğ	4.4	18	14	.7	ii	12	a.4
20	370	10	10	18	12	.6	9.0	17	.4
				j					
21	586	50	b80	19	13	.7	7.7	22	.4
22 23	439 264	27 26	32	19	15	a.8	6.4	19	.3
24	505	20	18 e 100	19 21	14 6	.7	5.1	16 13	a.2
25	1,780	292	1,400	28	10	.3 .8	5.1 5.5	10	.2 .1
	2,	202	``, .00			.,,	3.5	10	
26	1,050	137	388	52	12	1.7	6.0	9	a.1
27	528	104	148	38	10	1.0	6.0	9	.1
28	329	58	52	28	5	.4	6.0	11	a.2
29 30	228	34	21	35	2	.2	5.1	17	. 2
31	168	25	11	49	3	.4	34	28	s 3.8
Total.	10,940		2 222 2	35	5	a.5	200.0		
	10, 540		2,682.0	1,398		51.6	398.9		14.8
		July			August			September	
1	429		sb270	8.1	43	0.9	8.5	60	a 1
2	146	220 72	s31	7.7	43 27	.6	8.5	60 47	a1 1.1
2 3	146 62	220 72 41	s31 6.9	7.7 7.2	43 27 25	.6 .5	8.5 9.0	60 47 47	1.1 1.1
2 3 4	146 62 31	220 72 41 40	s31 6.9 a3	7.7 7.2 6.0	43 27 25 30	.6 .5 a.5	8.5 9.0 8.5	60 47 47 45	1.1 1.1 1.0
2 3	146 62	220 72 41	s31 6.9	7.7 7.2	43 27 25	.6 .5	8.5 9.0	60 47 47	1.1 1.1
2 3 4 5	146 62 31	220 72 41 40	s31 6.9 a3	7.7 7.2 6.0	43 27 25 30	.6 .5 a.5 .4	8.5 9.0 8.5	60 47 47 45	1.1 1.1 1.0
2	146 62 31 19	220 72 41 40 62	s31 6.9 a3 3.2	7.7 7.2 6.0 5.1	43 27 25 30 26	.6 .5 a.5	8.5 9.0 8.5 8.1	60 47 47 45 45	1.1 1.1 1.0 1.0
2	146 62 31 19 24 19 59	220 72 41 40 62 54 55	831 6.9 a3 3.2 3.5 2.8 e14	7.7 7.2 6.0 5.1 12 45 66	43 27 25 30 26 53 58 68	.6 .5 a.5 .4 s1.9 7.0	8.5 9.0 8.5 8.1 7.7 7.2 7.2	60 47 47 45 45 46 50	1.1 1.0 1.0 1.0 a1 1.0
2	146 62 31 19 24 19 59	220 72 41 40 62 54 55  60	831 6.9 a3 3.2 3.5 2.8 e14 b20	7.7 7.2 6.0 5.1 12 45 66 36	43 27 25 30 26 53 58 68 74	.6 .5 a.5 .4 s1.9 7.0 12 7.2	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2	60 47 47 45 45 46 50 50	1.1 1.0 1.0 1.0 a1 1.0 a1
2	146 62 31 19 24 19 59	220 72 41 40 62 54 55	831 6.9 a3 3.2 3.5 2.8 e14	7.7 7.2 6.0 5.1 12 45 66	43 27 25 30 26 53 58 68	.6 .5 a.5 .4 s1.9 7.0	8.5 9.0 8.5 8.1 7.7 7.2 7.2	60 47 47 45 45 46 50	1.1 1.0 1.0 1.0 a1 1.0
2	146 62 31 19 24 19 59 135 168	220 72 41 40 62 54 55  60	31 6.9 a3 3.2 3.5 2.8 e14 b20 a25	7.7 7.2 6.0 5.1 12 45 66 36 21	43 27 25 30 26 53 58 68 74 80	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50	1.1 1.0 1.0 1.0 a1 1.0 a1 a1
2	146 62 31 19 24 19 59 135 168	220 72 41 40 62 54 55  60 55	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25	7.7 7.2 6.0 5.1 12 45 66 36 21	43 27 25 30 26 53 58 68 74 80	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 8.5	60 47 47 45 45 46 50 50 50	1.1 1.0 1.0 1.0 a1 1.0 a1 a1
2	146 62 31 19 24 19 59 135 168	220 72 41 40 62 54 55  60	31 6.9 a3 3.2 3.5 2.8 e14 b20 a25	7.7 7.2 6.0 5.1 12 45 66 36 21	43 27 25 30 26 53 58 68 74 80	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50	1.1 1.0 1.0 1.0 a1 1.0 a1 a1
2	146 62 31 19 24 19 59 135 168 205 101 53 30	220 72 41 40 62 54 55  60 55 65 44 30	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14	43 27 25 30 26 53 58 68 74 80 81 74 63 55	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 5.1 6.8	60 47 47 45 45 46 50 50 50 50 50 50	1.1 1.0 1.0 1.0 a1 1.0 a1 a1 a1
2	146 62 31 19 24 19 59 135 168 205 101	220 72 41 40 62 54 55 60 55 65 44 34	s31 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9	7.7 7.2 6.0 5.1 12 45 66 36 21 15 14	43 27 25 30 26 53 58 68 74 80 81 74 63	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 5.1	60 47 45 45 46 50 50 50 50 49 45 38	1.1 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 a1
2	146 62 31 19 24 19 135 168 205 101 53 30 25	220 72 41 40 62 54 55  60 55 65 44 30 50	s31 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9 a2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15	43 27 25 30 26 53 58 68 74 80 81 74 63 55	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 6.8 6.4	60 47 47 45 45 50 50 50 50 50 50 50 57 57	1.1 1.0 1.0 1.0 a1 1.0 a1 a1 1.1 .9 .5
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25	220 72 41 40 62 54 55  60 55 65 44 34 30 50	s31 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9 a2 3.4	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14	43 27 25 30 26 53 58 68 74 80 81 74 63 55 42	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.1	8.5 9.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 49 45 38 57 57	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69	220 72 41 40 62 54 55  60 55 65 44 30 50	831 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9 a2 3.4	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 12	43 27 30 26 58 68 74 80 81 74 63 55 42	.6 a.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.5 6.8 6.4 5.5	60 47 47 45 45 46 50 50 50 50 50 50 57 49 45 38 57 57	1.1 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 1.1 .9 .5 1.0
2 3 4 5 6 7 7 8 8 9 10 11 12 13 14 15 15 16 17 18 19 19 19	146 62 31 19 24 19 59 135 168 205 101 53 30 25	220 72 41 40 62 54 55  60 55 65 44 34 30 50	s31 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9 a2 3.4	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14	43 27 25 30 26 53 58 68 74 80 81 74 63 55 42	.6 .5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.1	8.5 9.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 49 45 38 57 57	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0
2. 3	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69	220 72 41 40 62 54 55 65 44 30 50 50	831 6.9 a3 3.2 3.5 2.8 e14 b20 a25 36 12 4.9 a2 3.4	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14	43 27 30 26 53 58 68 74 80 81 63 55 42 43 42 45	5.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.1 1.6 2.1	8.5 9.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 5.1 6.8 6.4 5.5 5.1	60 47 47 45 45 50 50 50 50 49 45 38 57 57	1.1 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 a1 1.1 .9 .5 1.0 1.0
2	146 62 31 19 24 19 59 135 166 205 101 53 30 25 57 69 49 40 29	220 72 41 40 62 54 55 60 55 65 44 30 50 50 72 71 67	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4	43 27 30 26 53 58 68 74 80 81 74 63 55 42 43 42 45 44	.6 a.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a1 1.2 1.1	8.5 9.0 9.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 6.8 6.4 5.5 5.1 4.8 3.8	60 47 47 45 45 50 50 50 50 49 45 38 57 57 40 30 35 64	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 49 49 29	220 72 41 40 62 54 55 60 55 65 44 30 50 50 72 71 78	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 a 25 a 25 a 27 a 27 a 27 a 27 a 27 a 27 a 27 a 27	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 18 14 11 10 9. 4	43 27 30 26 53 58 68 74 80 81 74 63 55 42 43 44 45	.6 a.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a1 1.2 1.1	8.5 9.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 5.1 6.4 5.1 4.8 3.8 2.4	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 57	1.1 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 40 29 23	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1	43 27 30 26 53 58 68 67 80 81 74 63 55 42 43 42 45 44 45	.6 a.5 a.5 .4 s1.9 7.0 12 4.5 3.3 2.8 2.2 1.6 2.1 1.6 a1 1.1	8.5 9.5 8.7 7.2 7.2 7.2 7.2 7.2 7.2 8.5 7.1 6.4 5.5 5.1 4.8 3.8 2.4 1.8	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 40 30 35 64 65 39	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 6.4 a.5 a.7
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 49 49 29	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7,5 5.2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 6. 8	43 27 30 26 58 68 74 80 81 74 63 55 42 45 44 45 47 563	.6 a.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a1 1.1 1.1	8.5 9.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 7.2 5.1 6.4 5.5 5.1 4.8 3.8 2.4 1.8	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 57	1.1 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 4 a.5 a.7 .4 a.5 a.7
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1	43 27 30 26 53 58 68 67 80 81 74 63 55 42 43 42 45 44 45	.6 a.5 a.5 .4 s1.9 7.0 12 4.5 3.3 2.8 2.2 1.6 2.1 1.6 a1 1.1	8.5 9.5 8.7 7.2 7.2 7.2 7.2 7.2 7.2 8.5 7.1 6.4 5.5 5.1 4.8 3.8 2.4 1.8	60 47 47 45 45 46 50 50 50 50 50 49 45 45 47 40 35 55 64 65 39 40	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 6.4 a.5 a.7
2 3 4 5 6 6 7 7 8 9 10 11 12 12 13 14 15 16 17 17 18 19 22 23 22 24 25 5	146 62 31 19 24 19 59 135 108 205 101 53 30 25 57 69 49 40 29 23 17 14 77 95	220 72 41 40 62 54 55 60 55 65 44 34 30 50 50 72 71 67 78 44 37 85 52	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 a 25 a 22 4.9 a 2 3.4 7.7 a 9.5 7.7.7 5.2 4.8 2.0 1.4 a 18	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 5. 1	43 27 30 26 53 58 68 74 80 81 74 63 55 42 43 425 445 445 445 52 63 63 58	5.6 a.5 a.5 a.5 a.5 a.5 a.6 s.1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.1 6 2.1 1.6 a.1 1.2 1.1 1.1 1.1 1.1 1.1 1.1	8.5 9.0 8.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 5.1 6.4 5.5 5.1 4.8 2.4 1.8 2.4 1.8 1.0 8.5	60 47 47 45 45 46 50 50 50 50 49 45 38 57 57 40 30 55 64 65 39 40 38 62	1.1 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 .6 4 a.5 a.7 .6 .4 2.2
2	146 62 31 19 24 19 59 135 166 205 101 53 30 25 57 69 40 29 23 17 14 77 95	220 72 41 40 62 54 55 60 55 65 44 30 50 50 72 71 67 78 85 52 47	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 5.2 4.9 9.5 7.7,5.2 4.8 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 5. 1	43 27 30 26 53 58 68 74 80 81 74 63 55 42 45 47 63 63 63 63 63 63 63 63 63 63 63 63 63	.6 a.5 a.5 .4 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a1 1.2 1.1 1.1 1.1 1.2 1.4 8	8.5 9.0 8.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 7.2 6.8 6.4 5.5 5.1 4.8 3.8 2.4 1.0	60 47 47 45 45 46 50 50 50 50 49 45 38 57 40 35 64 65 40 38 62 60	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 5.5 1.0 1.0 .6 .4 a.5 a.7 a.6 .4 2.8 2.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17 77 95 52 30	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 84 437 85 52	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7.7 a 9 9.5 7.7.2 4.8 2.0 1.4 a 1.8 1.3 6.6 6.6 6.6 6.6	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0	43 27 30 26 53 58 68 74 80 81 63 55 42 43 425 445 445 445 52 63 63 55 55	.6 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5	8.5 9.0 8.5 8.1 7.2 7.2 7.2 7.2 7.2 7.2 6.8 6.4 5.5 5.1 4.8 2.4 1.8 2.4 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 40 35 55 64 65 39 40 38 62 63 88	1.1 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 .6 4 a.5 a.7 .6 .4 a.5 a.7
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17 14 77 95	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37 85 52	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8 13 6.6 6.6 4.2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 12 15 14 10 9. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0	43 27 30 26 58 68 74 80 81 74 63 55 42 43 42 45 44 45 63 63 58 55 63 55 57	.6 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5	8.5 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	60 47 47 45 45 46 50 50 50 50 49 45 38 57 40 35 64 40 38 62 60 38 38	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 .6 .4 .2 .8 .9 .9 .0 1.0
2	146 62 31 19 24 19 59 135 168 205 101 25 53 30 25 57 69 49 40 29 23 17 77 95 52 30 21 41	220 72 41 40 62 54 55 60 55 65 44 30 50 50 72 71 67 78 44 37 85 52 47 77 70	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5.5 2.8 4.9 a 2 3.4 7.7 5.2 4.8 2.0 1.4 a 18 1.4 a 18 1.4 a 18 1.4 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 18 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.7 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a 1.6 a	7. 7 7. 2 6.0 5.1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9.0 8.1 15.1 5.1 5.1 5.1	43 27 30 26 53 58 68 74 80 81 74 63 55 42 45 45 45 45 45 63 63 63 63 63 63 63 63 63 63 63 63 63	.6 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5	8.5 9.0 8.5 8.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2 6.8 6.4 5.5 5.1 4.8 7.0 8.5 1.0 8.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	60 47 47 45 46 50 50 50 50 49 48 38 57 57 40 35 62 60 38 33 33	1.1 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 5 1.0 1.0 4 a.5 a.7 .4 a.5 a.7 .2 .8 .9 2.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17 14 77 95	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37 85 52	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8 13 6.6 6.6 4.2	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 5. 1 7. 2 9. 0 10 10	43 27 30 26 58 68 74 80 81 74 63 55 42 43 445 445 447 52 63 63 58 55 57 78 63	.6 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5 a.5	8.5 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	60 47 47 45 45 46 50 50 50 50 49 45 38 57 40 35 64 40 38 62 60 38 38	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 .6 .4 .2 .8 .9 .9 .0 1.0
2	146 62 31 19 24 19 59 135 166 205 101 53 30 25 57 69 40 29 23 17 14 77 95 52 30 22 14 14 11	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37 57 78 44 37 50 50 50 50 50 50 50 50 50 50 50 50 50	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 5.2 4.8 9.5 7.7,5.2 4.8 1.4 a 18 13 6.6 4.6 4.6 4.2 0.2 1.1	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 19. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0 10 10 10 8. 1	43 27 30 26 53 58 68 74 80 81 74 63 55 42 45 45 45 45 45 63 63 63 63 63 63 63 63 63 63 63 63 63	.65 a.54 s1.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 2.1 1.1 1.1 1.1 1.2 1.4 2.8 a1 1.5 1.9 2.2 1.7	8.5 9.0 8.5 8.7 7.2 7.2 7.2 7.2 7.2 7.2 6.8 6.4 5.5 5.1 4.8 7.0 8.5 10 6.4 4.8 5.1 8.5 10 10 10 10 10 10 10 10 10 10	60 47 47 45 46 50 50 50 50 49 48 38 57 57 40 35 62 60 38 33 33	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.1 .9 5.5 1.0 1.0 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 .4 a.5 a.7
2	146 62 31 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17 14 77 95 52 30 22 14 12 11 2,117	220 72 41 40 62 54 55 60 55 65 44 30 50 50 72 71 67 78 44 37 85 52 47 77 70 54 45 37	s 31 6.9 a 3 3.2 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 5.2 4.8 2.0 1.4 a 18 13	7. 7 7. 2 6.0 5.1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 11 10 9. 4 9. 0 8. 1 10 10 10 10 10 10 10 10 10 10 10 10 10	43 27 30 26 53 58 68 74 80 81 74 63 55 42 45 45 45 45 45 45 63 63 63 63 63 63 63 63 63 63 63 63 63	.6 .5 .4 .5 .1.9 .7.0 .12 .2 .4 .5 .3 .3 .2 .2 .2 .1 .6 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 49 45 38 57 40 38 62 60 38 33 33 33 4	1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 1.1 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 .6 .4 .2 .8 .9 2.0 1.6 .4 .4 .2 .8 .9 2.0
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 40 29 23 17 14 77 95 52 30 22 14 12 11 2,117 ischarge for	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37 57 70 54 45 37 year (cfs-	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8 2.0 1.4 a 18 13 6.6 6.6 4.2 2.0 a 1 1.1 1.1 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0 10 10 10 10 10 10 10 10 10 10 10 10 10	43 27 30 26 53 58 68 74 80 81 74 63 55 42 43 445 445 447 52 63 63 58 55 57 72 63 63 58	.6 .6	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 40 30 55 64 65 39 40 38 62 60 38 33 33 33 33 33	1.1 1.1 1.0 1.0 1.0 1.0 a1 1.1 1.0 a1 1.1 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 .6 .4 .2 .8 .9 2.0 1.6 .4 .4 .8 .9 2.5 6 120,556.7
2	146 62 31 19 24 19 59 135 166 205 101 53 30 25 57 69 49 29 23 17 14 77 95 52 30 22 11 2,117 ischarge for year	220 72 41 40 62 54 55 60 55 65 44 30 50 72 71 67 78 44 37 57 70 54 45 37 year (cfs-	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7 5.2 4.8 2.0 1.4 a 18 13 6.6 6.6 4.2 2.0 a 1 1.1 1.1 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5 535.5	7. 7 7. 2 6.0 5.1 12 45 66 36 21 15 14 12 15 14 11 10 9. 4 9. 0 8. 1 11 10 9. 4 9. 0 8. 1 10 10 10 10 10 10 10 10 10 10 10 10 10	43 27 30 26 53 58 68 74 80 81 74 63 55 42 43 42 44 45 63 63 63 63 63 63 63 63 63 63 63 63 63	.6 .6	8.5 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 40 30 35 55 64 65 38 40 38 33 33 33 33 33	1.1 1.1 1.0 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1  1.1 a1 a1  1.1 a1 a1  1.1 a1 a1  1.1 a1 a1  1.1 a1 a1 a1  1.1 a1 a1 a1 a1 a1 a1 a1 a1 a1 a1 a1 a1 a1
2	146 62 31 19 24 19 59 135 166 205 101 53 30 25 57 69 49 29 23 17 14 77 95 52 30 22 11 2,117 ischarge for year	220 72 41 40 62 54 55 60 55 65 44 34 30 50 50 72 71 67 78 444 37 70 54 45 37 year (cfs-(tons)	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7.7 a 9 9.5 7.7.7 a 9 1.4 a 18 13 6.6 4.2 2.0 a 1.1 535.5 days)	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0 10 10 10 10 10 10 10 10 10 10 10 10 10	43 27 27 30 26 53 58 68 74 80 81 74 63 55 42 43 445 44 45 44 45 63 63 58 58 58 63 63 63 74 63 63 63 63 63 63 63 63 63 63 63 63 63	6.6 a.5 a.5 a.5 a.5 a.5 a.5 a.7 a.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a.1 1.1 1.1 1.1 1.2 1.4 .8 a.1 1.3 1.5 1.9 2.2 1.7 69.6	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 40 30 35 55 64 65 39 40 38 33 33 33 33 33 34 	1.1 1.1 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.7 a.6 a.7 a.7 a.6 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7
2	146 62 31 19 24 19 59 135 168 205 101 53 30 25 57 69 49 40 29 23 17 77 95 52 30 22 14 12 11 2,117 ischarge for aad for year	220 72 41 40 62 54 55 60 55 65 44 34 30 50 50 72 71 67 78 444 37 70 54 45 37 year (cfs-(tons)	s 31 6.9 a 3 3.2 3.5 2.8 e 14 b 20 a 25 36 12 4.9 a 2 3.4 7.7 a 9 9.5 7.7.7 a 9 9.5 7.7.7 a 9 1.4 a 18 13 6.6 4.2 2.0 a 1.1 535.5 days)	7. 7 7. 2 6. 0 5. 1 12 45 66 36 21 15 14 12 15 14 18 14 11 10 9. 4 9. 0 8. 1 6. 8 5. 1 7. 2 9. 0 10 10 10 10 10 10 10 10 10 10 10 10 10	43 27 27 30 26 53 58 68 74 80 81 74 63 55 42 43 445 44 45 44 45 63 63 58 58 58 63 63 63 74 63 63 63 63 63 63 63 63 63 63 63 63 63	6.6 a.5 a.5 a.5 a.5 a.5 a.5 a.7 a.9 7.0 12 7.2 4.5 3.3 2.8 2.0 2.2 1.6 a.1 1.1 1.1 1.1 1.2 1.4 .8 a.1 1.3 1.5 1.9 2.2 1.7 69.6	8.5 9.0 8.5 8.1 7.7 7.2 7.2 7.2 7.2 7.2 7.2 7.2	60 47 47 45 45 46 50 50 50 50 50 49 45 38 57 57 40 30 35 55 64 65 39 40 38 33 33 33 33 33 34 	1.1 1.1 1.0 1.0 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 1.0 a1 a1 1.1 .9 .5 1.0 1.0 .6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 .4 a.5 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.6 a.7 a.7 a.6 a.7 a.7 a.6 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7 a.7

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STREAMS TRIBUTARY TO LAKE ERIE -- Continued

# PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis: B, bottom withdrawal tube: D, decentation, P, pipetter, S, server, M, in native water; C, remucally dispersed: M, nechanically dispersed,

		Methods of analysis		BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM
			1.000									
			0. 500							100		
			0.350									
		llimeters	0,250	66	66	100	100	100	:	66	100	
		ize, in m	0.125	86	66	66	66	66	:	66	66	:
inca)		Percent finer than indicated size, in millimeters	0.062	96	26	66	66	86	9	66	66	100
Adres from	ediment	ner than to	0. 031	84	92	86	86	26	86	86	26	66
mechanic	Suspended sediment	Percent fü	0.016	92	91	96	86	96	84	97	92	86
1 304, 118,	S	_	0.004 0.008 0.016	88	82	06	92	93	92	95	94	94
arth arobe			0.004	84	79	84	63	06	88	92	90	90
, circuito			0.002	71	99	74	:	84	75	36	87	87
w, ill distilled water, c, chemically dispersed, m, incommittanty dispersed,		Concentration of suspension	analyzed (ppm)	826	1,400	957	1,040	1,410	1,620	1,740	109	652
, TIT (*		Concentration	of sample (ppm)	514	236	532	262	410	1,050	1,050	629	330
	Water	tem- per-	ature (°F)			_						
		Discharge (cfs)	Ì				4, 690	3,810			4, 250	
		Time		12:30 p.m.	2:55 a.m.	8:45 a.m.	1:30 p.m.	6:00 a.m.	4:45 p.m.	4:45 p.m.	4:15 p.m.	3:30 p.m.
		Date of collection		Oct. 15, 1954 12:30 p.m.	Oct. 16	Jan. 6, 1955	Jan. 7	Mar. 2	Mar. 4	Mar. 4	Mar. 12	Apr. 25

### SANDUSKY RIVER NEAR FREMONT, OHIO

LOCATION.--At gaging station at highway bridge, 2.3 miles upstream from Ballville power dam, 2½ miles downstream from Wolf Creek, and 3½ miles southwest of Fremont, Sandusky County. DRAINAGE AREA.--1,248 square miles. RECORDS AVAILABLE,--Chemical analyses: October 1950 to February 1952. Water temperatures: October 1950 to September 1955.

water temperatures: October 1950 to September 1955. Sediment records: October 1950 to September 1955. EXTREMES, 1954-55.--Water temperatures: Maximum, 91°F July 31; minimum, freezing roint on many days during December, January, and February.

Sediment concentrations: Maximum daily, 960 ppm Mar. 12; minimum daily, 1 ppm Oct. 1, Dec. 3, 24-27.

Sediment loads: Maximum daily, 25,100 tons Mar. 5; minimum daily, less than 0.5 ton

ediment loads: Maximum daily, 25,100 tons Mar. 5; minimum daily, less than 0.5 ton on many days during October to December, August and September. REMES, 1950-55.--Water temperatures: Maximum, 91°F July 31, 1955; minimum, freezing EXTREMES,

EXTREMES, 1950-55. --Water temperatures: Maximum, 91°F July 31, 1955; minimum, receing on many days during winter months.

Sediment concentrations: Maximum daily, 960 ppm Mar. 12, 1955; minimum daily, 1 ppm on many days during February, October to December 1952, February, October to December 1953, January, September, October, and December 1955.

Sediment loads: Maximum daily, 31,900 tons Mar. 12, 1952; minimum daily, less than 0.05 ton on several days during October 1952 and September 1954.

REMARKS.--Flow affected by ice Dec. 20-26, Jan. 18-Feb. 22. Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955

Once-daily measurement at approximately 7 p.m. Day Oct. Nov. Dec. Jan. Feb. Mar. July Aug. Sept. Арг 45 ----------------__ ----------__ ------------------15 ----------_---ឧก --_---------91 45 Aver----a 33 ---age

a Includes estimated temperature, 32°F, on Feb. 1, 7-9, 11-19, 21.

### ST. LAWRENCE RIVER BASIN

### STREAMS TRIBUTARY TO LAKE ERIE--Continued

### SANDUSKY RIVER NEAR FREMONT, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			ended sedim	ent, water y			T TEST		
		October		L	November			December	
	160	Suspende	d sediment	l	Suspende	d sediment		Suspended	d sediment
Day	Mean dis-	Mean		Mean dis-	Mean		Mean dis-	M€an	
,	charge	concen-	Tons	charge	concen-	Tons	charge	concen-	Tons
	(cfs)	tration	per	(cfs)	tration	per	(cfs)	tration	per
	(CLS)	(ppm)	day	(CIS)	(ppm)	day	(CIS)	(ppm)	day
1	19	1	(t)	64	8	1	254	4	3
2	32	2	(t)	64	7	1	219	2	1
3	28	3	(t)	61	5	1	191	1	1 1
4	24	8	1 1	61	5	1	165	2	1
5	43	10	1 1	72	5	1	140	7	a3
		ļ	1					)	j
6	80	12	2	117	4	1	135	12	4
7	154	20	8	196	3	2	117	20	6
8	131	17	6	159	3	1	100	11	, 3
9	84	20	4	131	3	1	91	3	1
10	95	27	7	112	2	1	84	2	(t)
									١ .
11	144	27	10	95	4	1	99	2	1
12	242	36	24	87	4	1	95	2	1
13	752	95	s 203	84	4	a1	87	2	il .
14	978	85	224	80	5	1	80	2 2	ä
15	1,100	122	s 412	76	7	a1	80	2	11
18	1 400	1.40	==	- 00		2	70	2	} (t)
16	1,480	145 97	579 2 <b>6</b> 4	68 76	10 7	1	72 76	2 2	il
17	1,010							2	il
18	732 501	68 54	134 73	61 58	3 3	(t)	87 91	2	11
19 20	357	47	45	58 58	4	(t) a 1	100	2	ľ i
	391	71	40	36	*	ЯI	100		
21	273	41	30	64	6	ai	110	2	1
22	207	38	21	87	7	2	110	2	l i
23	175	32	15	95	7	2	110	2	a i
24	140	24	9	87	12	3	110	l īl	n
25	108	13	انا	99	12	a 3	120	l î l	il .
			1 1	"				_	} (t)
26	95	8	2	170	9	4	130	1 1	l
27	84	7	2	207	10	6	140	1 1	į)
28	76	6	1 1	260	13	9	264	10	s 12
29	72	5	1 1	334	12	11	1,810	162	s 819
30	68	7	1 1	320	5	4	2,720	191	1,400
31	64	7	1				2,920	222	1,750
31 Total.	9,348		2,084	3, 503		66	2,920 10,907	222	1,750 4,014
				3,503		66			
Total .	9, 348	 Јапиату	2, 084		February		10,907	 Ma~ch	4,014
Total.	9, 348	January 153	2, 084	110	February 3	a 1	10,907	March 182	2,090
1	9, 348 2, 020 1, 460	January 153 100	2, 084 834 394	110 120	February 3 3	a 1 1	10,907 4,250 5,150	 March 182 3/4	4,014 2,090 5,060
1	9, 348 2, 020 1, 460 1, 430	January 153 100 99	2, 084 834 394 382	110 120 130	February 3 3 13	a 1 1 4	10,907 4,250 5,150 4,000	March 182 384 385	2,090 5,060 3,830
1 2 3	2,020 1,460 1,430 1,020	January 153 100 99 98	2, 084 834 394 382 270	110 120 130 120	February 3 3 13	a 1 1 4 4	10,907 4,250 5,150 4,000 8,260	March 182 3/4 3/5 8/56	2,090 5,060 3,830 s 21,200
1	9, 348 2, 020 1, 460 1, 430	January 153 100 99	2, 084 834 394 382	110 120 130	February 3 3 13	a 1 1 4	10,907 4,250 5,150 4,000	March 182 384 385	2,090 5,060 3,830
1 2 3 4	9, 348 2, 020 1, 460 1, 430 1, 020 1, 050	January 153 100 99 98 93	2, 084 834 394 382 270 s 280	110 120 130 120 120	February	a 1 1 4 4	10,907 4,250 5,150 4,000 8,260 11,400	March 182 3/84 3/85 8/86 8*5	2,090 5,060 3,830 s 21,200 25,100
1 2 3 4 6	9, 348 2, 020 1, 460 1, 430 1, 020 1, 050 7, 060	January 153 100 99 98 93 571	2, 084 834 394 382 270 s 280 s 12, 100	110 120 130 120 120	February	a 1 1 4 4 1	10,907 4,250 5,150 4,000 8,260 11,400 8,540	 March 182 3/4 3/5 8/5 8/5 8/5 8/5	2,090 5,060 3,830 s 21,200 25,100
1 2 3 4 5	9, 348 2, 020 1, 460 1, 430 1, 020 1, 050 7, 060 7, 420	January 153 100 99 98 93 571	2,084 834 394 382 270 s 280 s 12,100 10,900	110 120 130 120 120 120	February	a1 1 4 4 1 1	10,907 4,250 5,150 4,000 8,260 11,400 8,540 6,200	March 182 3/4 3/56 856 8*5 460 320	2, 090 5, 060 3, 830 s 21, 200 25, 100 10, 600 a 5, 400
1 2 3 5 6 7	2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760	January 153 100 99 98 93 571 544 319	2,084 834 394 382 270 s 280 s 12,100 10,900 4,100	110 120 130 120 120 120	February	a1 4 4 1 1 1	4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770	March 182 364 365 856 815 460 320 190	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420
1	2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760 2,660	January 153 100 99 98 93 571	2, 084 834 394 382 270 \$280 \$12, 100 10, 900 4, 100 1, 250	110 120 130 120 120 120 110 110 120 200	February	a1 1 4 4 1 1	10,907 4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700	March 182 3/4 3/56 856 8*5 460 320	2, 090 5, 060 3, 830 s 21, 200 25, 100 10, 600 a 5, 400
1	9,348 2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760 2,660 1,630	January 153 100 99 98 93 571 544 319 174 100	2,084 834 394 382 270 5280 512,100 10,900 4,100 1,250 440	110 120 130 120 120 120 110 110 120 200 450	February 3 3 13 13 2 2 2 2 2	a1 4 4 1 1 21	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340		2, 090 5, 060 3, 830 8 21, 200 25, 100 10, 600 a 5, 400 1, 420 542 a 290
Total.  1	9,348 2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760 2,660 1,630 1,190	January 153 100 99 98 93 571 544 319 174 100	2,084 834 394 382 270 \$280 \$12,100 10,900 4,100 1,250 440 202	110 120 130 120 120 110 110 120 200 450	February 3 3 13 13 2 2 2 2 2	a1 4 4 1 1 21	10,907 4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430	March 182 3/4 3/5 856 815 460 320 190 118 80	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000
Total.  1	9,348  2,020 1,460 1,430 1,020 1,050  7,060 7,420 4,760 2,660 1,630 1,190 934	January 153 100 99 98 93 571 544 319 174 100 63 40	2,084 834 394 382 270 5280 512,100 10,900 4,100 1,250 440	110 120 130 120 120 120 110 110 120 200 450	February 3 3 13 13 2 2 2 2 2	a1 4 4 1 1 21	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340 4, 430 9, 380	March 182 3/4 3/5 856 875 450 320 190 118 80 657 960	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000
1	9,348 2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760 2,660 1,630 1,190 934 778	January 153 100 99 98 93 571 544 319 174 100 63 40	2, 084 834 394 382 270 \$ 280 \$ 12, 100 10, 900 4, 100 1, 250 440 202 101 57	110 120 130 120 120 110 110 110 200 450 1,500 3,500 3,000	February 3 3 13 13 2 2 2 2 2	a1 4 4 1 1 2	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340 4, 430 9, 380 6, 480	March 182 3 44 3 55 8 56 8 15 460 320 190 118 80 657 960	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 a 290 s 12,000 a 24,000 7,870
Total.  1	9,348 2,020 1,460 1,430 1,020 7,060 7,420 4,760 2,660 1,630 1,190 934 778 645	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18	2, 084 834 394 382 270 280 \$12, 100 10, 900 4, 100 1, 250 440 202 101 57 31	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000	February 3 3 3 13 13 13 2 2 2 2 2 2 2 2 2	a1 4 4 1 1 21	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340 4, 430 9, 380 6, 480 3, 880	March 182 3 84 3 85 856 8 15 480 320 190 118 80 657 960 450 420	2,090 5,060 3,830 8 21,200 25,100 10,600 a5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400
1	9,348 2,020 1,460 1,430 1,020 1,050 7,060 7,420 4,760 2,660 1,630 1,190 934 778	January 153 100 99 98 93 571 544 319 174 100 63 40	2, 084 834 394 382 270 \$ 280 \$ 12, 100 10, 900 4, 100 1, 250 440 202 101 57	110 120 130 120 120 110 110 110 200 450 1,500 3,500 3,000	February 3 3 13 13 13 2 2 2 2 2 2 2 2	a1 4 4 1 1 2	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340 4, 430 9, 380 6, 480	March 182 3 44 3 55 8 56 8 15 460 320 190 118 80 657 960	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 a 290 s 12,000 a 24,000 7,870
Total.  1. 2	9, 348  2, 020 1, 490 1, 430 1, 020 1, 020 7, 060 7, 420 4, 760 2, 660 1, 630  1, 190 934 778 645 556	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18	2, 084  834 394 382 270 s 220 10, 900 4, 100 1, 250 440  202 101 203 31 22	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400	February  3 3 13 13 2 2 2 2 2	a1 4 4 1 1 2	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040	March 182 3 184 3 185 8 186 8 18 8 180 190 118 80 657 960 450 420 306	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,000 1,680
Total.  1	2, 020 1, 460 1, 430 1, 050 7, 060 7, 220 4, 760 2, 660 1, 630 1, 934 778 645 556	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8	2, 084  834 394 382 270 s 280 10, 990 4, 100 1, 250 440 202 101 57 31 22	110 120 130 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400	February  3 3 13 13 3 2 2 2 2 2	a1 4 4 1 1 2	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780	Ma~ch 182 3/4 3/55 856 8*5 450 320 190 118 80 657 960 450 420 306	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,880
Total.  1	2,020 1,460 1,430 1,050 1,050 7,060 7,420 4,760 1,630 1,190 934 778 645 556	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 15	2, 084  834 384 382 270 s 280 10, 900 4, 100 1, 250 440  202 101 57 31 22 11	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400	February  3 3 13 13 2 2 2 2 2	a 1 4 4 1 1 1 1 2 e 100	10, 907 4, 250 5, 150 4, 000 8, 260 11, 400 8, 540 6, 200 2, 770 1, 700 1, 340 4, 430 9, 380 6, 480 3, 880 2, 040 1, 780 1, 780 1, 780 1, 780	March 182 3°4 3°5 856 8°5 460 320 190 118 80 657 960 450 420 306	2,090 5,080 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,880
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 2,660 1,630 1,190 934 778 645 556	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 5 5 4	2, 084  834 394 382 270 8280 10, 990 4, 100 1, 250 440 202 101 57 31 122 11 6 4	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,000 1,200	February      3     3     13     3     2     2     2     2     2	a1 4 4 1 1 2	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,780 1,520	Ma~ch 182 3/4 3/5 856 8*5 460 320 190 118 80 657 960 450 420 306 182 122 81	2,090 5,060 3,830 s 21,200 25,100 10,600 a5,400 1,420 542 a290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300
Total.  1	2,020 1,460 1,430 1,020 1,050 7,420 4,760 1,630 1,190 934 7778 645 556 501 487 350	January 153 100 99 98 93 571 544 319 174 100 63 40 0 27 18 15 8 5 4 4 3	2, 084  834 394 382 270 8280 10, 900 4, 100 1, 250 1, 440 202 101 57 31 22 11 6 4 2	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,200 1,500 2,500	February  3 3 13 13 2 2 2 2 2	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060	Ma~ch 182 374 385 856 8*5 480 320 190 118 80 657 960 450 420 306 182 122 81	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 2,660 1,630 1,190 934 778 645 556	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 5 5 4	2, 084  834 394 382 270 8280 10, 990 4, 100 1, 250 440 202 101 57 31 122 11 6 4	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,000 1,200	February      3     3     13     3     2     2     2     2     2	a 1 4 4 1 1 1 1 2 e 100	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,780 1,520	Ma~ch 182 3/4 3/5 856 8*5 460 320 190 118 80 657 960 450 420 306 182 122 81	2,090 5,060 3,830 s 21,200 25,100 10,600 a5,400 1,420 542 a290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 2,660 1,630 1,934 778 645 556 501 467 350 290 250	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 55 4 3 2	2, 084  834 394 382 270 \$280 10, 900 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1	110 120 130 120 120 110 110 120 200 450 1,500 3,500 3,500 2,000 1,400 1,000 1,500 2,500 3,700	February  3 3 13 13 2 2 2 2 2 47	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,780 1,060 8,29	Ma~ch 182 374 375 856 8*5 460 320 190 118 80 657 960 420 306 182 122 81 68 60	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130
Total.  1	2, 020 1, 460 1, 430 1, 020 7, 060 7, 060 7, 4760 2, 660 1, 630 1, 190 934 745 556 501 467 350 290 220	January  153 100 99 98 93 571 544 319 174 100 63 40 27 18 15 4 3 2 2	2, 084  834 394 382 270 s 280 10, 900 4, 100 1, 250 440  202 101 57 31 22 11 6 4 4 2 1	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,200 1,500 2,500 3,700	February  3 3 13 13 2 2 2 2 2 4 7 47	a 1	10,907  4,250 5,150 4,000 8,260 11,400  8,540 6,200 2,770 1,700 1,340  4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060	Ma~ch 182 374 385 856 8*5 480 320 190 118 80 657 960 420 306 182 122 81	2,090 5,060 3,830 8 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,000 1,680 875 501 300 195 a 130
Total.  1	2, 020 1, 460 1, 430 1, 020 7, 060 7, 20 4, 760 4, 760 1, 630 1, 630 1, 934 778 645 556 501 467 350 200 250	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 5 4 3 2 2	2, 084  834 394 382 270 s 280 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1 a 1 1	110 120 130 120 120 110 110 120 200 450 1,500 3,500 3,500 3,000 2,000 1,400 1,200 1,500 2,500 3,700	February  3 3 13 13 2 2 2 2 2 2 4 7 47 430	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,370 1,060 829 1,610 6,340	Ma~ch 182 3/*4 3/*5 856 8*5 450 320 190 118 80 657 960 450 420 306 182 122 81 68 60	2,090 5,060 3,830 8 21,200 25,100 10,600 a 5,400 1,420 542 a 290 8 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130
Total.  1	9, 348  2, 020 1, 460 1, 430 1, 020 1, 050 7, 060 7, 420 4, 760 1, 630 1, 190 9314 645 556 501 467 350 220 190 220 190	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 15 8 5 4 3 .2	2, 084  834 384 382 270 8 280 10, 900 4, 100 1, 250 440  202 101 57 31 22 1 6 4 2 1 1 6 1 6	110 120 130 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700	February  3 3 13 13 2 2 2 2 2 4 7 47 430 340	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 829 1,610 6,340 6,340 7,150	March 182 314 315 856 815 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 510	2,090 5,060 3,830 8 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130 s 728 e 12,000
Total.  1	2, 020 1, 460 1, 430 1, 020 7, 060 7, 060 7, 4760 2, 660 1, 630 1, 190 934 778 645 556 501 467 350 290 250 220 190 160	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 55 4 3 2 2 2 13 7	2, 084  834 394 382 270 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1 11 6 3	110 120 130 120 120 110 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,200 1,500 2,500 3,700 7,980 6,480	February      3     3     13     13     3     2     2     2     2     2     4     7     430     340     227	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 829 1,610 6,340 7,150 5,940	March 182 3/4 3/5 856 8*5 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 -510 388	2,090 5,060 3,830 8 21,200 25,100 10,600 a5,400 1,420 542 a290 8 12,000 a 24,000 7,870 4,400 1,880 875 501 300 195 a 130 8728 e 12,000 9,840 6,220
Total.  1	9, 348  2, 020 1, 460 1, 430 1, 020 1, 050 7, 060 7, 420 4, 760 1, 630 1, 190 9314 645 556 501 467 350 220 190 220 190	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 15 8 5 4 3 .2	2, 084  834 384 382 270 8 280 10, 900 4, 100 1, 250 440  202 101 57 31 22 1 6 4 2 1 1 6 1 6	110 120 130 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700	February  3 3 13 13 2 2 2 2 2 4 7 47 430 340	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 829 1,610 6,340 6,340 7,150	March 182 314 315 856 815 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 510	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130 s 728 e 12,000 9,840
Total.  1	2, 020 1, 460 1, 430 1, 050 7, 060 7, 4760 2, 660 1, 630 1, 190 934 7785 6556 501 467 350 290 250 250 250 160 150	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 55 4 3 2 2 2 13 7 3	2, 084  834 394 382 270 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1 1 6 3 a1	110 120 130 120 120 110 110 110 120 200 450 1,500 3,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700 7,980 6,480 3,510	February      3     3     13     13     3     2     2     2     2     2     4     7     430     340     227	a 1	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 829 1,610 6,340 7,150 5,940 3,630	March 182 3/4 3/55 856 8*5 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 -510 388 228	4,014  2,090 5,060 3,830 8,21,200 25,100  10,600 a5,400 1,420 542 a290 8 12,000 a 24,000 7,870 4,400 1,680  875 501 300 195 a130  8728 e12,000 9,840 6,220 2,230
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 2,660 1,630 1,934 778 645 556 501 467 350 290 250 290 170 160 150	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 55 4 4 3 2 2 13 7 3	2, 084  834 394 382 270 s 280 10, 900 4, 100 1, 250 1, 250 1, 250 1, 250 1, 250 1, 250 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251	110 120 130 120 120 110 110 120 200 450 1,500 3,500 3,500 2,000 1,400 1,200 1,500 1,500 3,700 7,000 8,500 7,980 6,480 3,510 2,120	February  3 3 13 13 2 2 2 2 2 2 4 7 47 430 340 227 126	e 100  e 200  470  e 3,200 9,870 a 7,300 3,970 1,190 550	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,340 4,430 9,380 6,480 3,880 1,520 1,780 1,520 1,780 1,520 1,780 1,520 1,780 1,520 1,780 1,520 1,780 3,630 3,630	Ma~ch 182 374 375 856 8*5 460 320 190 118 80 657 960 420 306 182 122 81 68 80 140 510 388 228	2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,880 875 501 300 195 a 130 s 728 e 12,000 9,840 6,220 2,230 a 800
Total.  1	2,020 1,460 1,430 1,050 7,060 7,060 7,4760 2,660 1,630 1,190 934 778 645 556 501 487 350 280 280 280 190 150	January  153 100 99 98 93 571 544 319 174 100 63 40 27 18 15 8 5 4 3 2 2 2 1 3 7 3	2, 084  834 394 382 270 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1 1 6 3 a1	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,200 1,500 2,500 3,700 7,980 6,480 3,510 2,120 2,2370	February  3 3 13 13 3 2 2 2 2 2 2 4 7 47 430 340 327 126 96	a 1 1 4 4 1 1 1 1 2 e 100 e 200 470 e 3, 200 9, 870 a 7, 300 3, 970 1, 190 550 576	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 6,340 7,150 5,940 3,630 2,000	Ma~ch 182 3/4 3/55 8/56 8/5 8/56 8/5 4/60 3/20 190 118 80 657 960 420 306 182 122 81 68 60 140 510 388 228 150 102	4,014  2,090 5,060 3,830 8 21,200 25,100  10,600 a5,400 1,420 542 a 290 8 12,000 a 24,000 7,870 4,000 1,680  875 501 300 195 a 130  8 728 e 12,000 9,840 6,220 2,230 a 800 350
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 4,760 1,630 1,934 778 645 556 501 467 350 290 250 290 170 160 150	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 5 4 3 2 2 13 7 3	2, 084  834 394 382 270 s 280 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 6 4 2 1 1 6 3 3 a1	110 120 130 120 120 110 110 120 200 450 1,500 3,500 3,500 2,000 1,400 1,200 1,500 1,500 3,700 7,000 8,500 7,980 6,480 3,510 2,120	February  3 3 13 13 2 2 2 2 2 2 4 7 47 430 340 227 126	e 100  e 200  470  e 3,200 9,870 a 7,300 3,970 1,190 550	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,780 1,520 1,780 1,520 1,780 1,520 1,780 3,630 2,040 2,000 1,780 6,340 7,150 5,940 3,630 2,000 1,270	March 182 374 375 856 8*5 450 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 510 388 228	2,090 5,060 3,830 8 21,200 25,100 10,600 a 5,400 1,420 542 a 290 8 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130 8728 e 12,000 3 5,400 3 5,400 3 5,400 1,680
Total.  1	2,020 1,460 1,430 1,050 7,060 7,060 7,060 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050 1,050	January  153 100 99 98 93 571 544 319 174 100 63 40 27 18 15 8 5 4 3 2 2 2 1 3 7 3	2, 084  834 394 382 2780  \$12, 100 10, 900 4, 100 1, 250 440  202 101 57 31 22 1 1 6 4 2 1 1 6 3 a1 1	110 120 130 120 120 120 110 110 120 200 450 1,500 3,500 3,000 2,000 1,400 1,200 1,500 2,500 3,700 7,980 6,480 3,510 2,120 2,2370	February  3 3 13 13 3 2 2 2 2 2 2 4 7 47 430 340 327 126 96	a 1 1 4 4 1 1 1 1 2 e 100 e 200 470 e 3, 200 9, 870 a 7, 300 3, 970 1, 190 550 576	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 6,340 7,150 5,940 3,630 2,000 1,270 949	Ma~ch 182 3/4 3/55 8/56 8/5 8/56 8/5 4/60 3/20 190 118 80 657 960 420 306 182 122 81 68 60 140 510 388 228 150 102	4,014  2,090 5,060 3,830 8 21,200 25,100  10,600 a 5,400 1,420 542 a 290 8 12,000 a 24,000 7,870 4,400 1,680  875 501 300 195 a 130  8 728 e 12,000 9,840 6,220 2,230 a 800 350
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 4,760 2,660 1,630 1,190 934 778 645 556 501 467 290 250 290 250 160 150 150 140 150 140 150 140 150 140 150	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 55 4 3 2 2 2 13 7 3 4 6	2, 084  834 384 382 270 8 280 10, 900 4, 100 1, 250 440  202 101 57 31 22 1 6 4 2 1 1 6 3 a1 1 1 1 1 1	110 120 130 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700 7,900 8,500 7,980 6,480 3,510 2,120 2,370 3,630	February  3 3 13 13 3 2 2 2 2 2 2 4 7 47 430 340 227 126 96 90 103	a 1 1 4 4 1 1 1 1 2 e 100 e 200 470 e 3, 200 9, 870 a 7, 300 3, 970 1, 190 550 576	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 3,880 2,040  1,780 1,520 1,370 1,060 829 1,610 6,340 7,150 5,940 3,630 2,000 1,270 992 1,630	March 182 364 365 856 875 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 510 388 228 150 102 657 47	4,014  2,090 5,060 3,830 8 21,200 25,100 10,600 a5,400 1,420 542 a290 8 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a130 8728 e12,000 9,840 6,220 2,230 a 800 350 166 126 211
Total.  1	2,020 1,460 1,430 1,050 7,060 7,420 4,760 2,660 1,630 1,1934 778 645 556 501 467 350 220 220 190 170 160 150 140 130 120	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 5 4 3 2 2 13 7 3 2 2 2 3 4 6 6 5	2, 084  834 394 382 270 s 280 10, 900 4, 100 1, 250 1, 250 1, 250 1, 250 1, 250 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251 1, 251	110 120 130 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700 7,980 6,480 3,510 2,120 2,370 3,500 3,500	February  3 3 13 13 3 2 2 2 2 2 2 4 7 47 430 340 227 126 96 90 103	a 1 1 4 4 1 1 a 1 1 2   e 100  e 200 470  e 3, 200 9, 870 a 7, 300 3, 970 1, 190  550 576 1, 010	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,340 4,430 9,380 6,480 3,880 2,040 1,780 1,520 1,370 1,060 829 1,610 6,340 7,150 5,940 3,630 2,000 1,270 949 992 1,630 2,330	Ma~ch 182 3/4 3/5 8/6 8/5 8/6 8/5 4/60 3/20 190 118 80 657 960 420 306 182 122 81 68 60 140 510 388 228	4,014  2,090 5,060 3,830 s 21,200 25,100 10,600 a 5,400 1,420 542 a 290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a 130 s 728 e 12,000 9,840 6,220 2,230 a 800 350 166 126 211 415
Total.  1	9, 348  2, 020 1, 460 1, 430 1, 050 7, 060 7, 4760 2, 660 1, 630 1, 190 934 778 556 501 467 4350 280 190 170 180 150 140 140 130 120 138, 151	January 153 100 99 98 93 571 544 319 174 100 63 40 27 18 8 55 4 3 2 2 2 13 7 3 4 6	2, 084  834 394 382 270 8280 10, 990 4, 100 1, 250 440 202 101 57 31 22 11 64 22 1 1 81 63 81 1 1 1 1 2	110 120 130 120 120 110 110 120 200 450 1,500 3,500 2,000 1,400 1,200 1,500 2,500 3,700 7,900 8,500 7,980 6,480 3,510 2,120 2,370 3,630	February  3 3 13 13 3 2 2 2 2 2 2 4 7 47 430 340 227 126 96 90 103	a 1 1 4 4 1 1 1 1 2 e 100 e 200 470 e 3, 200 9, 870 a 7, 300 3, 970 1, 190 550 576	10,907  4,250 5,150 4,000 8,260 11,400 8,540 6,200 2,770 1,700 1,340 4,430 9,380 6,480 2,040 1,780 1,520 1,370 1,060 6,340 7,150 5,940 3,630 2,000 1,270 949 949 1,630 2,330 120,220	March 182 364 365 856 875 460 320 190 118 80 657 960 450 420 306 182 122 81 68 60 140 510 388 228 150 102 657 47	4,014  2,090 5,060 3,830 s 21,200 25,100 10,600 a5,400 1,420 542 a290 s 12,000 a 24,000 7,870 4,400 1,680 875 501 300 195 a130 s 728 e 12,000 9,840 6,220 2,230 a 800 350 166 126 211

e Estimated. s Computed by subdividing day.

t Less than 0.5 ton.
a Computed from estimated concentration graph.

### SANDUSKY RIVER NEAR FREMONT, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955--Continued

		April			May			June	
	Mean	-	l sediment	Mean		d sediment	Mean		d sediment
Day	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons	dis-	Mean concen-	Tons
	charge (cfs)	tration	per	charge	tration	per	charge (cfs)	tration	per
		(ppm)	day	(cfs)	(ppm)	day	<u> </u>	(ppm)	day
1	2,290	80	495	357	57	55	80	16	3
3	1,800 1,250	75 70	a 360 a 240	300 267	52 50	42 36	68 58	20 23	4
4	881	63	150	242	42	27	55	26	4
5	686	57	106	219	33	20	52	27	4
6	574	52	80	196	32	17	49	30	a 4
7	492	47	62	175	35	a 16	46	30	a 4
8	434	37	43	165	35	a 16	61	35	6
9	386 349	32 33	33 31	149 159	38 39	15 17	61 58	37 34	6 5
	010		31	135	33	1'	36	34	,
11	327	33	29	159	35	15	64	42	7
13	349 349	34 33	32 31	154 144	40 40	17 a 16	76 80	45 47	a 9 10
14	349	27	25	135	30	11	76	41	8
15	401	32	35	135	19	a7	68	21	4
16	386	40	a 40	117	15	5	61	18	a 3
17	342	38	35	108	13	4	55	18	a 3
18	342	27	25	95	8	2	49	18	2
19 20	364 882	20 84	a 20	91 91	5 5	1 1	43	17 16	2 2
	002	04	s 222	91	9	a1	43	10	4
21	1,530	224	925	87	7	2	40	14	a 2
22	1, 250 992	210 92	a 700 246	84 80	11 11	2 2	37 32	11 8	1 1
24	1,050	100	a 280	80 80	23	5	32 28	8	a l
25	2,160	143	834	84	37	8	26	9	al
26	1,390	113	424	84	22	5	26	9	1
27	964	102	265	72		hil	26	12	î
28 29	710	98	188	72		e 2	26	12	1
30	538 426	85 68	a 120 78	95 91		l ez	26 34	12 17	1 a 2
31				95		J			
Total .	24, 243		6, 154	4, 382		374	1, 504		106
		July			August			September	
1	95	90	23	24	15	ai	23	12	1
2	76	34	7	23	17	at	19	9	(t)
3 4	84 61	19 17	4 3	23 17	16 15	al al	15 15	12 14	(t) 1
5	55	17	2	13	14	(t)	15	15	i
6	68	25	- 4				4.5	14	a1
7	72	45	a4 a9	14 88	12 66	(t) s 20	15 15	13	1 1
8	122	144	s 52	126	56	19	15	13	a 1
9	180 140	116	56	112	57	17	13	15	1
10	170	116	44	111	52	16	13	16	1
11	103	100	a 30	1,660	270	s 1, 420	14	13	•
12	84 76	49 40	11 a8	996 635	300 260	a 800 a 440	14	10 9	
14	68	41	8 8	409	213	235	14 14	8	(t)
15	58	40	a 6	294	155	123	13	9	, ,
16	87	45	a 10	201	100	a 55	13	12	
17	191	50	a 25	140	88	33	13	18	1
18	144	60	23	108	73	21	11	9	-
19	103 84	63 45	18 a 10	87 68	42 37	10 7	11 10	4	
21	61	32	5	55	22	3	10	2	
23	46 37	20 20	2 2	49 43	17 16	a 2 2	11 13	2 2	
24	195		e 50	37	15	1	14	3	(t)
25	149	72	29	. 32	15	1	21	5	
26	80	36	8	30	14	a1	32	3	
27	49	27	4	28	15	1	32		
28	37 30	20	a 2	24	17	1	30		
30	30 28	15 10	1 1	28 28	17 13	1 1	28 26		_
31	26	12	i	24	13	ī			
Total .	2,689		458	5, 527		3, 236	502		14
T-4-1 A	ischarge for	year (cfs-	days)						285, 456
Total d	1.6								
Total le	oad for year	(tons)	• • • • • • • • • • • • • • • • • • • •			n 0 5 ton			237,834
Total le e Estir	oad for year nated.	tons)	• • • • • • • • • • • • • • • • • • • •		t Less tha			ration graph	

# SANDUSKY RIVER NEAR FREMONT, OHIO .- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analysis. B. bottom withdrawal tude: D. deconation: p. pipette: S. is sieve; N, in native water; C. w. in distilled water: C. o-hemically disnersed.

		Methods of analysis	<u>}</u>	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM	BSWCM	BSWCM
			1.000								
			0.500								
			0.350					,			
		llimeters	0, 250						_		
		Percent finer than indicated size, in millimeters	0.125	100	:	8	:	100	100	100	
r sen)	•	ndicated s	0.062	86	100	66	100	66	66	66	100
arry cushe	ediment	ner than l	0.031	9.1	86	86	8	96	96	86	86
mechanic	Suspended sediment	Percent fi	0.016	85	94	94	91	06	91	95	96
rsea, m,	S		0.008	82	06	81	<b>6</b> 8	84	81	81	88
any make			0.004 0.			18	83	75	99	19	82
c, chemic			0.002	57	10	67	2	29	20	49	88
w, in distilled water; C, chemically dispersed; m, ineclianically dispersed,		Concentration of suspension	analyzed (ppm)	1, 220	190	810	1,470	1,860	1,880	2, 100	803
, w		Concentration	of sample (ppm)	161	808	430	399	1,020	1,020	883	476
	Water	tem-	ature (°F)		_						
		Discharge	(g ₁₂ )	8,820	9,100	6,480	5, 410	12,000	12,000	12,600	6,610
		Time		4:00 p.m.	5:45 p.m.	5:40 p.m.	8:15 a.m.	5:45 p.m.	5:45 p.m.	9:00 a.m.	3:30 p.m.
	í	Date of collection		Jan. 6, 1955	Jan. 6	Jan. 7	Mar. 2	Mar. 4	Mar. 4	Mar. 5	Mar. 23

### HURON RIVER AT MILAN, OHIO

LOCATION.--Temperature recorder at gaging station on right bank, 45 feet downstream from bridge on U. S. Highway 250, a quarter of a mile northwest of Milan, Erie County, and 2 miles downstream from confluence of East and West Branches.

BRACHES AVAILABLE.--Shanter miles.

RECORRS AVAILABLE.--Chemical analyses: March 1950 to February 1952.

KETHERIS. 1954-51.--Water temperatures: Maximum, 91°F July 27, Aug. 4; minimum, freezing point on many days during December, January, and February.

EXTREMES, 1954-65.--Water temperatures: Maximum, 91°F July 27, Aug. 4; minimum, freezing point on many days during winter months.

EXTREMES, 1950-195.--Water temperatures: Maximum, 91°F July 27, Aug. 4, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1954 to September 1955

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Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	/qc		max	74	9	3 5	20	80	18	11	29	8	23	7.5	69	22	91	42	80	8	83	18	82	8	18	11	74	2.5	82	62	42	11	:	92
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	o mograț	,	min	2.0	20.0	5 %	99	09	19	26	5. T	3	92	50	29	61	28	29	26	26	20	62	19	67	69	99	63	51	63	69	99	29	26	19
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	ted ther	Ma	max	12.2	2 2	2 5	- 22	7	89	65	62	3	89	2 :	89	69	2	12	89	89	67	23	73	12	12	74	69	69	12	15	72	89	7.1	10
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	Septemi S-actua		mtn	47	£ 0	2 5	46	52	48	43	% E	3	23	አ' :	8	9	9 <u>6</u>	21	28	55	8	09	9	28	24	26	28	53	51	22	\$	99	1	53
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	and to	Apri	-	48	3 2	5 6	26	- 19	26	24	19	3	62	9 1	9	99	29	65	89	65	29	64	5	89	63	63	19	23	62	99	69	69	:	62
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	toper i us ethy	ų	s	141	90	. 6	36	37	34	32	34	2	4.1	7.	44	41	#	41	38	39	37	39	43	42	38	41	39	3,1	35	34	36	37	38	39
Mar.   Coctober   November   Coctober   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Mar.   Ma	ontinuo	Marc		42	7 :	1.64	42	39	37	35	42		49	£ :	. 4	4.7	7.4	45	41	41	44	44	47	47	42	46	43	39	39	41	44	42	45	43
Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober	H		H	31	22	3 2	32	32	32	32	33	7	E :	3	35	32	32	32	32	32	31	31	31	32	33	33	34	35	36	39	;	1	:	32
Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober	water, attachr	Februa	ă	32	25	, E	3 %	33	33	32	322	3	32	32	6	33	32	34	34	36	33	37	32	33	35	36	36	35	39	41	;	1	1	34
Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober	rature	H	5	34	2 6	000	37	38	36	35	35	3	32	4, 6	23	88	32	32	32	31	3	3	31	31	31	31	31	31	32	33	33	33	32	33
Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober   Coctober	rature h tempe	Januar	Н	37	200	6 4	40	14	38	37	36	9	37	9 19	0 10	35	32	37	35	37	36	36	37	32	35	35	34	34	34	35	32	34	34	36
Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Max   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min   Min	lempe derwit	ı.		35		. 7	33.		32					= :		4.	<u>۔۔۔</u>	32	34	9	22	=	34	33		22	<u>۔۔</u>		22	22		7.	32	33
October November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   November   Nov	/Recor	ecempe	Н		_	_							_	_	_	_	_		_		_	_		_			_	_		_	_	_	_	_
October November 1		Н	Ë	36	9 6	2 8	38	38	37	38	39	3 ;	38	60	9 1	37		37	39	42	4.5	44	41	39	37	39	38	37	36	37	35		;	38
October Max Max Max Max Max Max Max Max Max Max		ovembe	Н	44	2 0	43	42	42	42	42	2 6		= :	2,	<b>-</b>	===	2	#3	42	- 46	6	6	44	#3	42	=	42	17	-	9	<b>9</b>	39	:	42
October max m max m m m m m m m m m m m m m m m		Ż	Н	00.5	- Z S	3.5	3.4			_	_			_	_	_			_	_		_	- 21	- 21			-						68	L
		ctober	Н			_									_			_		_		_	_	_			_	_	_					_
Day  1		ိ	man	L										_	_				_								<u>.</u>							
	!	Dav	787	1		4		9	7	8			1.1	19	14	15.		16	17.	10	20		21	22	20	25	20	26	27	28	29.	30.	31	Average

### CUYAHOGA RIVER AT INDEPENDENCE, OHIO

LOCATION.--At gaging station, 140 feet downstream from highway bridge on Rockside Road, 1 mile northeast of Independence, Cuyahoga County, and 3 miles downstream from Tinkers

1 mile nortneast of independent, Creek.

Creek.

DRAINAGE AREA.--709 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949.

Water temperatures: October 1948 to September 1949, August 1952 to September 1955.

Sediment records: October 1950 to September 1955.

EXTREMES, 1954-55.--Water temperatures: Maximum, 85°F July 27, Aug. 2; minimum, freezing point on several days during January and February.

Sediment concentrations: Maximum daily, 1,740 ppm May 24; minimum daily, 1 ppm

Sent 4 10.

Sediment concentrations: Marimum daily, 25,300 tons Oct. 15; minimum daily, less than 0.5 ton Sept. 4, 10.

Sediment loads: Maximum daily, 25,300 tons Oct. 15; minimum daily, less than 0.5 ton Sept. 4, 6-8, 10.

EXTREMES, 1948-49, 1950-55.—Water temperatures (1948-49, 1952-55): Maximum, 88°F

Aug. 18, 1949; minimum, freezing point on several days during December 1933, January 1954, January and February 1955.

Sediment concentrations (1950-55): Maximum daily, 1,740 ppm May 24, 1955; minimum daily, 1 ppm Sept. 4, 10, 1955.

Seciment concentrations (1930-33): Maximum daily, 1,740 ppm may 27, 1936, manimum daily, 1 ppm Sept. 4, 10, 1955. Seciment loads (1950-55): Maximum daily, 34,000 tons Mar. 25, 1954; minimum daily, less than 0.5 ton on several days during August, September 1954, and September 1955. REMARKS.--Records of discharge for water year October 1954 to September 1955 given in WSP 1387.

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 12 m.7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	46	41	41	33	42	50	60	70	74	83	67
2	72	46	43	41	34	42	54		71	80	85	67
3	71	47	40	38	32	41	50	65	71	78	83	70
4	70	45	41	40	32	44	50	73	73	80	84	70
5	65	46	40	43	34	42	51	70	76	81	83	74
6	65	47	37	38	39	38	55	66	72	80	81	71
7	58	47	36	36	38	34	56	65	73	80	78	70
8	56	48	36	39	37	37	50	63	67	81	77	67
9	64	47	39	39	39		53	61	70	84	77	70
10	65	48	39	37	39	51	51	60	71	81	77	
11	66	49	37	37	34	52	58	61	71	72	78	70
12	68	50	39	38	32	53	61	66	- 68	78	78	66
13	66	49	39		32	47	61	64	62	73	72	65
14	70	59	40	36	34	46	61	65	65	79	67	68
15	57	50	39	37	35	51	58	64	67	79	75	70
16	54	50	38	38	35	49	58	68	73	80	80	74
17	54	55	39	35	37	42	60	65	70	79	80	77
18	54	54	39	34	37	43	57	66	77	81	82	76
19	52	58		34	39	48	63	63	76	81	81	74
20	52	54	34	35	40	47	63	68	76	82	83	71
21	53	50	35	36	35	50	62	68	76	81	81	70
22	56	47	34	37	35	48	62	73	76	81	79	70
23	54	41	39	35	37	42	62	73	75	80	76	66
24	55	46	38	36	37	46	60	67	75	78	75	70
25	55	46	37	35	36	44	58	67	72	80	75	65
26	59	45	34	34	36	38	54	68	70	82	74	62
27	57	44	39	32	42	38	55	68	68	85	75	64
28	54	45	44	32	41	38	61	72	73	81	75	66
29	53	43	40	32		40	62	73	76	82	76	67
30	50	41	39	32		42	60	66	73	81	75	68
31	48		42	32		48		68		84	73	
ver- age	60	48	39	36	36	44	57	67	72	80	78	69

### CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955

			ended sedin	ent, water y			ember 1955		
		October		li	November	•		December	
	Mean	Suspende	d sediment	Mean	Suspende	d sediment	Mean	Suspende	1 sediment
Day	dis-	Mean	Tons	dis-	Mean	Tons	dis-	Mean	Tons
•	charge	concen-	per	charge	concen-	per	charge	concen-	per
	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day	(cfs)	tration (ppm)	day
	271	200	100	358	(ppiii) 2		443	12	14
1 2	123	40	sa 180 13	354	2 2	2 2	498	15	20
3	106	19	5	331	2	2	516	18	25
4	1,060	1,350	s 5, 030	354	3	3	516	20	28
5	826	750	sa 1,900	398	17	18	498	11	15
					_		400	١ _	١.
6 7	714 328	650 42	sa 1, 900 37	371 358	6 4	6 4	429 378	7 8	8
8	255	29	20	358	3	3	318	5	4
9	278	17	13	337	4	4	318	7	6
10	337	280	sa 380	328	5	4	422	23	26
11	400	20.4		22.4	_				١ .
11	429 912	634 700	734 sa 1, 900	314 301	5 5	4	375 314	9 10	9 8
13	1,700	790	s 4, 250	271	5	4	311	12	10
14	881	180	428	265	5	4	361	17	16
15	7,070	1,220	s 25, 300	239	6	4	587	36	57
16	12, 100	713	22 200	239	5	,	551	ا م	96
16 17	6, 320	345	23, 300 5, 890	239 219	6	3 4	498	24 18	36 24
18	4, 110	267	2,960	207	7	4	957	188	s 554
19	3,630	245	2,400	194	5	3	938	80	b 200
20	2,980	205	1,650	185	3	1	788	43	91
91	2, 210	160	955	194	2	.	714	34	66
21 22	1,600	128	955 553	174	2 2	1	641	34	66 59
23	1,260	114	388	204	3	2	659	27	48
24	957	75	194	229	12	7	957	38	98
25	770	52	108	321	11	10	900	28	68
0.0	659	43	76	904	-		752		40
26 27	551	35	52	294 281	7 2	6 2	938	21 31	43 78
28	498	27	36	324	5	4	1,340	170	sa 750
29	443	20	24	481	48	s 70	1,700	280	s1,430
30	398	12	13	481	21	27	3, 150	816	s7,840
31	378	2	2				1,950	144	758
Total .	54, 154	l	80, 691	8,964		213	23,717		12,397
		January			February			March	
1	1,700	101	464	275	8	6	2,820	356	s 2, 900
2	1,750				8				,
3	1,100	97	458	248		5	2,380	190	1,220
	1,600	97 78	337	248	9	6	2, 380 2, 100	123	1,220 697
4	1,600 1,520	97 78 77	337 316	248 219	9 11	6 6	2, 100 6, 170	123 522	697 s9,110
5	1,600	97 78	337	248	9	6	2,100	123	697
	1,600 1,520 1,600 3,990	97 78 77	337 316 s716	248 219	9 11	6 6	2, 100 6, 170 5, 020 3, 630	123 522	697 s9,110 4,970
5 6 7	1,600 1,520 1,600 3,990 2,600	97 78 77 139  123	337 316 \$716 e 3, 700 863	248 219 210 301 464	9 11 11 21 31	6 6 17 39	2, 100 6, 170 5, 020 3, 630 2, 700	123 522 367 280 220	697 s 9, 110 4, 970 2, 740 1, 600
5 6 7 8	1,600 1,520 1,600 3,990 2,600 1,900	97 78 77 139  123 102	337 316 \$716 e 3, 700 863 523	248 219 210 301 464 422	9 11 11 21 31 21	6 6 6 17 39 24	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050	123 522 367 280 220 175	697 s 9, 110 4, 970 2, 740 1, 600 969
5 6 7 8 9	1,600 1,520 1,600 3,990 2,600 1,900 1,560	97 78 77 139  123 102 65	337 316 8716 e 3, 700 863 523 274	248 219 210 301 464 422 436	9 11 11 21 31 21	6 6 6 17 39 24 e 30	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900	123 522 367 280 220 175 144	697 s 9, 110 4, 970 2, 740 1, 600 969 739
5 6 7 8	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470	97 78 77 139  123 102	337 316 \$716 e 3, 700 863 523	248 219 210 301 464 422	9 11 11 21 31 21	6 6 6 17 39 24	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050	123 522 367 280 220 175	697 s 9, 110 4, 970 2, 740 1, 600 969
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470	97 78 77 139  123 102 65 51	337 316 8716 e 3, 700 863 523 274 202	248 219 210 301 464 422 436 1,570	9 11 11 21 31 21	6 6 6 17 39 24 e 30 sa 2,000	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900	123 522 367 280 220 175 144	697 s 9, 110 4, 970 2, 740 1, 600 969 739 583
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030	97 78 77 139  123 102 65 51 49	337 316 8716 e 3, 700 863 523 274 202 172 133	248 219 210 301 464 422 436 1,570 2,760 1,560	9 11 11 21 31 21  400	6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510	2,100 6,170 5,020 3,630 2,700 2,050 1,900 1,800 3,920 3,630	123 522 367 280 220 175 144 120 861 447	697 s 9, 110 4, 970 2, 740 1, 600 969 739 583 s 10, 900 4, 380
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900	97 78 77 139  123 102 65 51 49 48	337 316 s716 e3,700 863 523 274 202 172 133 b110	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300	9 11 11 21 31 21  400	6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900 1, 800 3, 920 3, 630 2, 600	123 522 367 280 220 175 144 120 861 447 251	697 \$9,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752	97 78 77 139  123 102 65 51 49 48 45 44	337 316 8716 e 3, 700 863 523 274 202 172 133 b 110 89	248 219 210 301 464 422 436 1,570 2,760 1,560 1,070	9 11 11 21 31 21  400	6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900 1, 800 3, 920 3, 630 2, 650 2, 050	123 522 367 280 220 175 144 120 861 447 251	697 s 9, 110 4, 970 2, 740 1, 600 969 739 583 s 10, 900 4, 380 1, 760 1, 180
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900	97 78 77 139  123 102 65 51 49 48	337 316 s716 e3,700 863 523 274 202 172 133 b110	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300	9 11 11 21 31 21  400	6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900 1, 800 3, 920 3, 630 2, 600	123 522 367 280 220 175 144 120 861 447 251	697 \$9,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752 659	97 78 77 139 123 102 65 51 49 48 45 44	337 316 8716 e 3, 700 863 523 274 202 172 133 b 110 89	248 219 210 301 464 422 436 1,570 2,760 1,560 1,070	9 11 11 21 31 21  400	6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900 1, 800 3, 920 3, 630 2, 650 2, 050	123 522 367 280 220 175 144 120 861 447 251	697 s 9, 110 4, 970 2, 740 1, 600 969 739 583 s 10, 900 4, 380 1, 760 1, 180
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752 659 569 516	97 78 77 139 	337 316 8716 e 3, 700 523 274 202 172 133 b 110 89 65	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919	9 11 11 21 31 21  400  121 78 46 39 45 54	6 6 6 6 6 17 39 24 e 30 sa 2,000 e 3,600 274 133 105 112 140	2,100 6,170 5,020 3,630 2,700 2,050 1,900 1,800 3,920 3,630 2,600 2,050 1,800	123 522 367 280 220 175 144 120 861 447 251 214 143	697 8 9, 110 4, 970 2, 740 1, 600 969 739 583 \$10, 900 4, 380 1, 760 1, 180 695 886 480
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752 659 569 516 481	97 78 77 139  123 102 65 51 49 48 45 44 37	337 316 8716 e 3, 700 863 523 274 202 172 133 b 110 89 65	248 219 210 301 464 422 436 1,570 2,760 1,560 1,070 1,070 995 919 957 826	9 11 11 21 31 21  400  121 78 46 39 45 54	6 6 6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274 133 105 112 140 107	2,100 6,170 5,020 3,630 2,700 2,050 1,900 1,800 3,920 3,630 2,600 2,050 1,800	123 522 367 280 220 175 144 120 861 447 251 214 143	697 4,970 2,740 1,600 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 900 752 659 569 516 481	97 78 78 77 139  123 102 65 51 49 48 45 44 37	337 316 5716 e 3, 700 863 523 274 202 172 133 b 110 88 965	248 219 210 301 464 422 436 1,570 2,760 1,500 1,070 1,070 995 919 957 826 826	9 11 11 21 31 21  400  121 78 46 39 45 54 48 61	6 6 6 6 6 6 7 7 39 24 e 30 sa 2,000 e 3,600 274 133 105 112 140 107 136	2,100 6,170 5,020 3,630 2,700 1,900 1,800 3,830 2,600 2,050 1,800 2,050 1,800	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80	697 8 9, 110 4, 970 2, 740 1, 600 969 739 583 \$10, 900 4, 380 1, 760 1, 180 695 886 480 354 255
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752 659 569 516 481	97 78 77 139  123 102 65 51 49 48 45 44 37	337 316 8716 e3,700 863 523 274 202 172 133 b110 89 65 55 21 18	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480	9 11 11 21 31 21  400  121 78 46 39 45 54	6 6 6 6 6 17 39 24 e 30 sa 2,000 e 3,600 510 274 133 105 112 140 107	2,100 6,170 5,020 3,630 2,700 2,050 1,900 1,800 3,920 3,630 2,600 2,050 1,800	123 522 367 280 220 175 144 120 861 447 251 214 143	697 4,970 2,740 1,600 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354
5	1,600 1,520 3,990 2,600 1,900 1,560 1,470 1,300 1,030 900 752 659 569 481 446 409	97 78 78 77 139 123 102 65 51 49 48 45 44 37 22 21 19 16 15 14	337 316 \$716 \$716 \$3,700 \$63 \$23 \$274 202 \$172 \$133 \$110 \$89 \$65 \$34 226 \$18 15	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390	9 11 11 21 31 21  400  121 78 46 39 45 54 48 61 210	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2,100 6,170 5,020 3,630 2,700 1,900 1,800 3,630 2,600 2,050 1,800 1,560 1,180 1,180	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69	697 \$9,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,300 900 752 659 569 516 481 446 409	97 78 77 139 	337 316 8716 8716 e3,700 863 523 274 202 172 133 b110 89 95 55 34 26 21 11 18 15	248 219 210 301 464 422 436 1,570 2,760 1,560 1,070 1,070 995 919 957 826 826 1,480 3,390 4,390	9 111 21 31 21  400  121 78 46 639 45 54. 48 61 210	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2,100 6,170 5,020 3,630 2,700 1,900 1,800 3,920 3,630 2,600 2,050 1,800 1,560 1,180 1,180 1,070	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69	697 4, 970 2, 740 1, 600 969 739 583 \$10, 900 4, 380 1, 760 1, 180 695 886 480 354 255 199 \$2,500 12,200
5	1,600 1,520 2,600 1,900 1,900 1,900 1,560 1,470 1,300 900 752 659 568 481 446 409	97 78 8 77 139 123 102 65 51 49 48 45 44 37 22 19 16 15 14 18 18	337 316 3716 863,700 863,523 274 202 172 133,5110 89 65 34 26 21 18 18 15	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 995 826 826 1,480 3,390 4,390 4,390 3,150	9 111 21 31 21 31 21  400  121 78 46 39 45 54. 48 61 210	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2,100 6,170 5,020 3,630 2,700 2,050 1,900 1,800 3,920 3,630 2,600 2,050 1,800 2,050 1,1800 1,560 1,180 1,070 2,310 5,480 3,390	123 522 367 280 220 175 144 120 861 447 251 214 143 184 114 98 80 69 340 828 300	697 89,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 12,740
5	1,600 1,520 2,600 1,900 1,900 1,560 1,470 1,300 900 752 752 759 569 516 441 446 448 409 354 381 375 341	78 78 77 139 	337 316 8716 e 3,700 863 523 274 202 172 133 b 110 89 65 34 26 21 11 11 11 11 11 11 11 11 11 11 11 11	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 826 1,480 3,390 4,390 3,150 2,540	9 111 21 31 21  400  121 78 46 39 45 54 48 61 210 262 158	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 700 1, 900 1, 800 3, 920 3, 630 2, 600 2, 050 1, 800 2, 000 1, 560 1, 180 1, 180 1, 070 2, 310 5, 480 3, 390 2, 700	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171	697 4,970 2,740 1,600 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 2,740 1,250
5	1,600 1,520 2,600 1,900 1,900 1,560 1,700 1,300 702 752 759 569 516 481 446 449 331 375 341 358	97 78 77 139 	337 316 8716 e 3,700 863 523 274 202 172 133 b 110 89 65 34 26 21 21 21 18 15 17 18	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 995 826 826 1,480 3,390 4,390 4,390 3,150	9 111 21 31 21 31 21  400  121 78 46 39 45 54. 48 61 210	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 750 1, 900 1, 800 3, 820 2, 650 1, 800 2, 050 1, 560 1, 180 1, 180 1, 180 2, 100 2, 100 1, 180 1, 180 1, 180 2, 100 2, 100 1, 180 1, 180 1, 180 1, 180 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2, 190 2,	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 4,970 2,740 1,600 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 2,740 1,250 1,000
5	1,600 1,520 1,600 3,990 2,600 1,900 1,560 1,470 1,030 900 752 659 516 481 446 409 354 361 375 341 358	97 78 77 139 	337 316 3716 863, 700 863, 523 274 202 172 133 b110 89 65 34 26 21 18 15 17 18 12	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 1,070 995 826 1,480 3,390 4,390 4,390 3,150 2,540 2,260 2,100	9 111 21 31 21 31 21  400  121 78 46 39 45 54 48 61 210 480 601 262 158 142	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 750 1, 900 1, 800 3, 920 3, 630 2, 650 1, 800 2, 050 1, 800 1, 560 1, 340 1, 180 1, 070 2, 100 1, 560 1, 340 1, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2, 180 2,	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 \$9,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,200 12,200 22,740 1,250 1,000 691
5	1,600 1,520 2,600 1,900 1,900 1,900 1,560 1,470 1,030 900 752 659 569 569 441 446 440 354 381 375 341 358	97 78 87 77 139 123 102 65 51 49 48 45 44 37 22 19 16 15 14 18 18 18 18 10 10 11	337 316 \$716 \$716 \$23,700 \$63 \$23 274 202 172 133 \$110 89 86 55 17 18 11 18 15 15 17 18 11 17 18 11 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390 4,390 2,540 2,260	9 111 21 31  400  121 76 46 39 45 54 48 61 210 262 158 142	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2,100 6,170 5,020 3,630 2,700 1,900 1,800 3,920 3,630 2,650 1,800 2,050 1,800 2,050 1,340 1,180 1,770 2,310 5,480 3,390 2,700 2,210	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 2,740 1,250 1,000 691 413
5	1,600 1,520 2,600 1,900 1,900 1,560 1,470 1,300 900 752 659 569 516 481 446 409 354 381 375 341 358	97 78 77 139 	337 316 8716 83,700 863 523 274 202 172 133 b110 89 965 34 26 21 11 18 15	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390 3,150 2,540 2,260 2,160	9 111 21 31 21 400  121 76 46 639 45 54. 48 61 210 262 158 142 140 144 126	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 700 1, 900 1, 800 3, 920 3, 630 2, 600 2, 050 1, 800 2, 050 1, 1800 1, 1800 1, 1800 1, 1800 1, 1800 1, 1800 2, 110 2, 110 5, 110 5, 110 2, 110 2, 110 2, 110 1, 700 1, 520	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 255 12,200 2,740 1,250 1,250 1,250 1,250 1,250 1,250 1,250
5	1,600 1,520 2,600 1,900 1,900 1,560 1,470 1,300 900 702 752 659 569 516 481 446 409 354 354 381 375 341 358	97 78 77 139 	337 316 \$716 \$716 \$716 \$63 523 274 202 172 133 b110 89 65 24 21 18 15 17 18 18 15 10 15 17 18 18 18 18 18 18 18 18 18 18 18 18 18	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390 4,390 2,540 2,260	9 111 21 31  400  121 76 46 39 45 54 48 61 210 262 158 142	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 700 2, 050 1, 900 1, 800 3, 630 2, 650 1, 800 2, 050 1, 800 2, 050 1, 180 1, 180 1, 180 1, 180 1, 180 2, 100 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1, 180 1,	123 522 367  280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168 128 90 76 86	697 \$9,110 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 22,740 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,250 1,
5	1,600 1,520 2,600 1,900 1,900 1,900 1,560 1,470 1,030 900 752 659 569 516 481 441 446 409 354 384 381 388 285 275 288 225 252	97 78 77 139 	337 316 8716 83,700 863 523 274 202 172 133 b110 89 965 34 26 21 11 18 15	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390 3,150 2,540 2,260 2,160	9 111 21 31  400  121 78 46 39 45 48 61 210 262 158 142 140 144 126	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 700 1, 900 1, 800 3, 920 3, 630 2, 600 2, 050 1, 800 2, 050 1, 1800 1, 1800 1, 1800 1, 1800 1, 1800 1, 1800 2, 110 2, 110 5, 110 5, 110 2, 110 2, 110 2, 110 1, 700 1, 520	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 4,970 2,740 1,600 969 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 255 12,200 2,740 1,250 1,250 1,250 1,250 1,250 1,250 1,250
5	1,600 1,520 2,600 1,900 1,900 1,560 1,470 1,300 900 702 752 659 569 516 481 446 409 354 354 381 375 341 358	97 78 77 139 	337 316 8716 e 3,700 863 523 274 202 172 133 b 110 89 65 34 26 21 21 18 15 17 18 15 18 15 17 18 18 15 18 15 18 15 18 16 18 18 18 18 18 18 18 18 18 18 18 18 18	248 219 210 301 464 422 436 1,570 2,760 1,560 1,300 1,070 995 919 957 826 826 1,480 3,390 3,150 2,540 2,260 2,160	9 111 21 31  400  121 78 46 39 45 48 61 210 262 158 142 140 144 126	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	2, 100 6, 170 5, 020 3, 630 2, 750 1, 900 1, 800 3, 820 2, 600 2, 050 1, 800 2, 000 1, 560 1, 180 1, 070 2, 310 5, 480 3, 390 2, 700 2, 210 2, 210 2, 210 2, 210 2, 200 1, 520 1, 520 1, 550 1, 750	123 522 367 280 220 175 144 120 861 447 251 214 143 164 114 98 80 69 340 828 300 171 168	697 \$9,110 4,970 2,740 1,600 739 583 \$10,900 4,380 1,760 1,180 695 886 480 354 255 199 \$2,500 12,200 2,740 1,250 1,000 691 413 312 362 406

e Estimated.

s Computed by subdividing day.

^{-- 26,640 78,140 -- 68,855}a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

### ST. LAWRENCE RIVER BASIN

### STREAMS TRIBUTARY TO LAKE ERIE--Continued

### CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

Suspended sediment, water year October 1954 to September 1955--Continued
April May

		April	4		May	d d/4		June	J J/ A
_	Mean	Mean	d sediment	Mean	Mean	d sediment	Mean	Mean	d sediment
Day	dis-	concen-	Tons	dis-	concen-	Tons	dis-	concen-	Tons
	charge (cfs)	tration	per day	charge (cfs)	tration	per day	charge (cfs)	tration	per day
		(ppm)	L		(ppm)			(ppm)	
1 2	1,520 1,260	45 36	185 122	1,300 1,070	69 55	242 159	301 265	15 15	12 11
3	1,110	35	105	881	48	114	235	15	10
4	995	30	80	733	30	59	216	12	7
5	900	32	78	623	27	45	198	15	8
6	807	22	48	498	25	34	171	16	7
7	733	22	44	464	6	8	204	17	9
8 9	641 587	28 10	48 16	696 498	 15	e 210 20	419 605	88 104	s 150 170
10	534	7	10	516	18	25	464	29	36
			'			1			
11 12	481 481	6 8	8 10	426 298	13 11	15 9	443 498	30 38	36 51
13	443	3	4	285	10	8	1,420		e 2, 900
14	770	74	s 178	278	8	6	862	107	249
15	1,560	188	792	239	13	8	623	40	67
16	1,380	76	283	207	12	7	481	40	52
17	1 470	85	s777	216	10	6	412	35	39
18	1,340 1,460	73 84	264	207	10	6 5	364 301	24 16	24 13
19 20	4, 390	490	s 386 5,810	213 207	9 4	2	245	18	12
į.			0,010		•	_			
21	3,210	316	2,740	194	8	4	252	15	10
22	2,050 1,470	132 96	731 381	182 255	10 16	5 11	252 204	9 9	6 5
24 [	1,860	130	sa 800	1,780	1,740	s11,000	248	9	6
25	3,810	580	5,970	714	342	s 833	213	9	5
26	4, 250	318	3,650	446	33	40	182	8	4
27 }	2,820	147	1,120	314	22	19	144	11	4
28 [	2,210	107	638	301	22	18	165	10	4
29 30	1,950 1,650	90 74	474 330	422 368	40 22	sa 50 22	149 185	13 37	5 s 32
31				321	15	13			
Total.	48, 142		26,082	15, 152		13,003	10, 721		3,944
		July			August			September	
1	862	380	a 900	108	15	4	105	4	1
							ا ممنا		
2	587	184	292	123	5	2	100	2	1
3	412	68	81	125	10	3	101	2	ī
	412 412	68 	81 e 110	125 123	10 6	3 2		2 1	
3 4 5	412 412 288	68  18	81 e 110 14	125 123 127	10 6 8	3 2 3	101 93 78	2 1 3	(t) 1
3 4 5	412 412 288 248	68  18 15	81 e 110 14	125 123 127	10 6 8	3 2 3 4	101 93 78 76	2 1 3	(t) 1 (t)
3	412 412 288 248 258	68  18 15 20	81 e 110 14	125 123 127 134 291	10 6 8 12 210	3 2 3 4 sa 220	101 93 78 76 90	2 1 3 2 2	(t) 1 (t) (t)
3	412 412 288 248 258 275 385	18 15 20 15 100	81 e110 14 10 14 . 11 sa 110	125 123 127 134 291 258 160	10 6 8 12 210 120 14	3 2 3 4 sa 220 sa 120 6	101 93 78 76 90 90 93	2 1 3 2 2 2 2 2	(t) (t) (t) (t) (t)
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3	412 412 288 248 258 275 385 245	18 15 20 15 100 18	81 e110 14 10 14 . 11 sa 110	125 123 127 134 291 258 160 142	10 6 8 12 210 120 14 8	3 2 3 4 sa 220 sa 120 6 3	101 93 78 76 90 90 93 110	2 1 3 2 2 2 2 2 1	(t) (t) (t) (t) (t) (t) (t)
3	412 412 288 248 258 275 385 245	68  18 15 20 15 100 18	81 e110 14 10 14 . 11 sa 110 12	125 123 127 134 291 258 160 142	10 6 8 12 210 120 14 8	3 2 3 4 sa 220 sa 120 6 3	101 93 78 76 90 90 93 110 253 154	2 1 3 2 2 2 2 1	(t) (t) (t) (t) (t) (t) (t) sa 16
3	412 412 288 248 258 275 385 245 176 162 144	68  18 15 20 15 100 18 10 10	81 e110 14 10 14 . 11 sa 110 12	125 123 127 134 291 258 160 142 176 160 188	10 6 8 12 210 120 14 8	3 2 3 4 5a 220 5a 120 6 3 5 5 3 5 28	101 93 78 76 90 90 93 110 253 154 129	2 1 3 2 2 2 2 1 20 - 6	(t) (t) (t) (t) (t) (t) (t) (t) sa 16 2
3	412 412 288 248 258 275 385 245	68  18 15 20 15 100 18	81 e110 14 10 14 . 11 sa 110 12	125 123 127 134 291 258 160 142 176 160 188 516	10 6 8 12 210 120 14 8	3 2 3 4 sa 220 sa 120 6 3 5 3 5 3 8 28 sa 290	101 93 78 76 90 90 93 110 253 154	2 1 3 2 2 2 2 1	(t) (t) (t) (t) (t) (t) (t) sa 16
3	412 412 288 248 258 275 385 245 176 162 144 142 136	68 	81 e110 14 10 14 . 11 sa 110 12 5 4 5 5	125 123 127 134 291 258 160 142 176 160 188 516 210	10 6 8 12 210 120 14 8 10 8 32 170 22	3 2 3 4 4 sa 220 6 3 5 3 5 28 sa 290 12	101 93 78 76 90 93 110 253 154 129 105	2 1 3 2 2 2 2 1 1 20 - 6 5 2	(t) (t) (t) (t) (t) (t) sa 16 2 2 1
3	412 412 418 288 258 275 385 245 176 162 144 142 136	68 	81 e110 14 10 14 11 sa 110 12 5 4 5 5	125 123 127 134 291 258 160 142 176 160 188 516 210	10 6 8 12 210 120 14 8 10 8 32 170 22	3 2 3 4 sa 220 sa 120 6 3 5 3 s 28 sa 290 12 6	101 93 78 76 90 93 110 253 154 129 105 101	2 1 3 2 2 2 2 1 20 - 5 2 2	1 (t) 1 (t) (t) (t) (t) (t) (t) (t) (t) 2 2 1 1 1 1
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3	112 412 412 288 288 275 385 245 176 162 144 142 136 169 149 1331 198 157 134 123 570 278 182 157 201 214 154 154 157	68 	81 e110 14 10 14 11 12 12 5 4 4 5 5 4 4 8 24 4 2 2 2 2 2 3 2 2 4 4 2 2 3 2 2 4 4 2 2 3 2 2 4 4 2 2 3 2 2 4 4 2 2 3 3 2 2 4 4 4 2 2 3 3 2 2 4 4 4 2 2 3 3 2 2 4 4 4 2 2 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 2 2 3 3 3 2 2 4 4 4 4	125 123 127 134 291 160 142 176 160 188 516 210 168 160 160 160 160 139 142 125 116 207 139 121 106 101 108 96 112	10 6 8 12 210 144 8 10 8 32 170 22 14 22 18 13 18 10 7 7 20 15 10	3 2 3 4 sa 220 sa 120 6 3 3 5 28 sa 290 12 6 10 8 5 7 3 2 2 11 6 6 3 6 2 1 1 2 1 2 1 2	101 93 78 76 90 90 93 110 253 154 129 105 101 103 98 90 79 88 84 102 255 127 93 94 190 123 190	2 1 2 2 2 2 2 2 2 2 3 5 4 5 5 7 8 45 20 8 5 9 19 9 19 9 19 9 19 19 19 19 19 19 19 1	1 (t) (t) (t) (t) (t) (t) (t) (t) (t) (t)
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t Less than 0.5 ton.

a Computed from partly estimated concentration graph.

STREAMS TIRBUTARY TO LAKE ERIE--Continued

CUYAHOGA RIVER AT INDEPENDENCE, OHIO -- Continued

Particle-size analyses of suspended sediment, water year October 1954 to September 1955 (Methods of analyses, B, bottom withdrawal lube; D, deconitation, P, pipette; S, serve; M, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

:	Methods of analysis	<u> </u>	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSWCM	BSNM
		1.000										
		0.500 1.000	;	:	66	100	100	100	86	100	:	;
		0.350										
	Percent finer than indicated size, in millimeters	0, 250	;	1	86	26	66	86	92	66	100	100
	tze, in mi	0.125	100	;	26	94	86	94	93	86	66	66
	ndicated s	0.016 0.031 0.062	86	100	84	91	92	91	06	96	66	86
sediment	ner than 1	0.031	81	86	92	84	91	98	84	92	96	96
Suspended sediment	Percent fi	0.016	83	68	82	11	82	75	74	80	06	87
S		0.008	67	83	89	28	69	28	61	65	72	52
		0.004	48	90	26	47	22	45	52	53	28	30
	on 0. 002				45	\$	47	36	44	43	45	20
	Concentration of suspension	analyzed (ppm)	4,870	1,440	1, 160	626	901	1,120	993	1,140	1,970	1,960
	Concentration	oi sample (ppm)	3,370	749	1, 180	373	984	1,260	592	622	2, 110	2, 110
Water	tem-	ature (°F)										
	Discharge (cfs)		l				5, 420			3,090		
	Time		6:00 p.m.	10:40 a.m.	7:15 p.m.	10:15 a.m.	8:20 p.m.	11:15 a.m.	1:00 p.m.	10:45 a.m.	7:30 p.m.	7:30 p.m.
i	Date of collection		Oct. 4, 1954	Oct. 13	Oct. 15	Oct. 17	Mar. 11, 1955 8:20 p.m.	Mar. 22	Apr. 20	Apr. 25	May 24	May 24 7:30 p.m.

### STREAMS TRIBUTARY TO LAKE ONTARIO GENESEE RIVER AT SCIO, N. Y.

LOCATION.--At bridge at Scio, Allegany County, about 0.6 miles downstream from Vandermark Creek and about 1 mile downstream from gaging station. DRAINAGE.-32 square miles.

RECORDS AVAILABLE.-Chemical analyses: October 1854 to September 1855.

Water temperatures: October 1854 to September 1855.

RECKREMERS, 1854-55.-Dissolved Soldies: Maximum, 256 ppm Oct. 11-15, 20; minimum, 74 ppm Mar. 11-20.

RETKREMERS, 1854-55.-Dissolved Soldies: maximum, 34 ppm Feb. 21.

Specific conductance: Maximum, 417 micromhos Aug. 11-13; minimum, 32° pec. 6, 20-22. Jan. 27.

Water temperatures: Maximum, 85° pang, 2, 5; minimum, 32° pec. 6, 20-22. Jan. 27.

REMARKS.-Records of specific conductance of daily samples available in district of office in Albany, N. Y. Mean discharges reported are at gaging Records of discharge for water year October 1955 given in WSP 1387.

Mean discharges reported are at gaging station.

		ST. LA	WRE	ICE	E	RI	VE.	R	BA	SI	ī																		
	ned	Fil- tered	:	: :	;	;	;	:	;	:	:	ł	:	:	:	i	!	;	:	;	;	;	:	;	:	;	;	:	:
	Oxygen	Unfil- tered	1	: :	;	;	!	:	;	;	;	;	:	;	;	:	:	;	1	:	;	:	;	1	;	1	;	1	ī
		Color	12	19	;	-	<b>~</b>	m	64	64	;	က	;	e	;	1	ß	60	e	es	<u></u>	9	9	1	15	2	1	ı,	0
	- P		5.7	. 6	;	7.0	7.1	7.0	7.0	7.0	6.9	9.9	1	9.9	6.5	!	6.0	6.9	. 2	7.0	7.1	6.7	6.8	:	6.2	8.8	1		5
	Specific conduct-	(micro- mhos at 25°C)	378	323	:	376	381	367	332	334	344	250	;	261	141	;	153	203	240	252	267	258	191	;	145	111	;	118	120
	ness aCO,	Non- carbon- ate	37	32	:	23	40	45	47	47	4	42	1	42	33	;	44	32	31	35	38	34	30	}	38	20	;	21	707
1955	Hardness as CaCO,	Total	5	3 8	;	95	81	æ	91	88	8	68	: ;	72	4	:	\$	28	9	73	72	62	41	;	46	34	1	36	25
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids (residue	on evap- oration at 180°C)	221	65 ;	:	228	224	213	217	225	:	155	;	161	!	;	102	141	165	162	160	;	110	;	;	16	;	74	76
1954 to	Nitrate	(NO ₃ )	2.0	2 6	1	8	16	4.0	3.5	20	3.0	4.0	:	2.8	5.5	;	1.8	4.0	4.0	3,3	2.7	3.8	3.7	;	3.5	3.1	;	3.0	
October		(F)	0.1	· ;	:		₹.	•	0.	0	1	0.	:	٥.	!	!	۰.	Ξ.	Ξ.	7	7	:	٥.	:	:	0.	:	=:	7
ter year	Chlo-	(CI)	52	3 2	:	8	63	67	99	65	88	46	: :	48	20	:	18	8	36	39	47	45	22	:	82	13	:	12	4.
nillion, wa	Sulfate	(SO ₄ )	45	8.9	1	=======================================	22	27	ន	20	2	202	;	20	20	;	32	18	18	18	11	19	16	;	16	16	;	13	 4
rrts per n	Bicar-	(HCO ₃ )	78	69	;	88	28	29	75	8	47	: 22	: :	37	14	1	25	32	42	47	42	34	21	;	10	16	;	18	20
es, in pa	Po- tas-	sium (K)	1.6	-	;	2.8	2.1	1.5	1.4			1.3	: :	1.2		!	1.3	1.4	1.5	1.5	2.8		1.6	;	7	1.3	:	6.	1.0
ical analys	Sodium	(Na)	38	43 18	:	38	37	31	30	58	2	20 20	1	20	9.6	1	4.3	12	19	10	22	24	12	;	9.7	9.9	!	0.9	6.9
Chem	Mag- ne-	sium (Mg)	8.8	: 1	1	7.1	5.4	7.0	6.8	9		20	; ;	5.4	:	:	7.9	5.0	2.0	5.4	4.7	;	8.3	:	!	2.4	:	8.8	3.0
	Cal-	(Ca)	53	; ;	;	56	26	26	22	25	;	19	;	20	1	;	12	12	81	20	21	:	13	;	;	9.2	!	9.2	9.2
	Iron	(Fe)	0.29	1 1	. 42	44	.36	.33	. 27	24		:	. 17	:	1	.23	.13	.16	.17	19	. 22	;	;	. 45	1	1	2.8	. 17	==
	Silıca	(8103)	Ξ,	;	1	5.1	5.4	3.5	5.9	r.	-	4.2	:	5.1	;	1	5.9	5.7	4.5	5.0	4.2	:	4.8	;	;	4.4	:	12	12
	Mean	(cfs)	28	202	; ;	43	49	46	69	99	76	6		170	ij	;	146	196	92	62	116	218	747	ľ	4,300	1,940	;	1,220	896
	Take of mellocetics	Date of confection	Oct. 1-10, 1954	Oct. 16-19, 20	Oct. 11-20	Oct. 21-31	Nov. 1-10	Nov. 11-20	Nov. 21-30	Dec 1-10	Dec 11-14	Dec. 15-20	Dec. 11-20	Dec. 21-28.	Dec. 29-31	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	Feb. 1-10	Feb. 11-20.	Feb. 21.	Feb. 22-28	Feb. 21-28.	Mar. 1	Mar. 2-10	Mar. 1-10	Mar. 11-20	Mar. 21-31

;	;	:	;	;	:	;	1	;	;	;	!	3.2		6.4	4.4	4.1	4.0	;	:	4.0	ł	3.5	3.7	3.9	3.4	:
;	;	:	;	;	;	;	;	;	;	;	;	4.1	,	6.5	8.8	4.5	4.1	;	;	4.0	;	3.9	4.0	4.4	4.0	
es es		10	2	2	:	2	12	=	18	14	;	60		_	-	ro	2	:	;	<b>∞</b>	;	80	ď	'n	80	7
7.	7.3	2.	2.6	7.4	;	7.6	7.1	7.2	7.0	7.1	ì	1.0		4:	2.3	7.4	7.6	7.2	6.8	7.4	1	7.3	7.4	7.2	7.3	-
155	174	183	185	242	;	508	227	260	194	246	;	309		322	310	324	368	417	218	273	:	290	363	354	352	265
22	7	21	20	15	:	20	19	22	21	22	:	77		52	27	28	35	36	30	35	1	33	37	74	33	30
27.5	2	51	23	49	;	09	63	70	88	99	;	81	;	<b>2</b>	26	98	100	103	57	78	;	80	92	88	06	и
8	104	===	112	;	;	122	147	164	;	151	:	164	į	176	168	174	198	;	;	147	;	151	190	189	188	158
1.9	3		1.1	7.	;	1.5	6.	1.4	1.5	1.4	;	9.	,	2.5	1.2	1.7	1.7	;	;	1.6	;	6.	6.	0.	1.3	3.4
-i.	<u> </u>	•	•	:	:	0.	٥.	-:	:	0.	;	0.	•	•	۲.	-	0.	;	1	-:	1	-:	•	۲.	٦.	0.06
88	57	27	22	34	;	8	33	40	28	36	;	46		45	41	48	24	92	32	40	;	46	8	25	24	42
15	91	16	16	16	;	16	16	16	14	16	;	20	,	18	17	13	21	12	17	20	;	11	18	18	20	18
56	36	36	9	42	;	49	53	29	45	ቖ	;	99	-	72	16	2	42	71	33	25	;	57	67	48	70	49
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9.5		_		g	:	1.1		_	16	_	:	26		_	_	~	_	37	15	_	;	_	_	_	_	2
8.8	-	-		-		4.1	_	- 6.	;	.3 19		5.7	_	7.0 26	-	-	7.9 30	-:	:	.7 20	-	6.0 23	_	_	-	.2 22
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41	20.	2.9	2.6	;	1	4.2	2.3	1.7	:	2.4	:	4.3	_	7.2	7.2	6.2	6.2	;	;	4.8	1	2.6	3.9	4.9	4.7	5,5 (
324	_	_	-	160	:	86	73	22	116	28	1	41	-	37	28	28	20	145	332	69	-	-	-	-		246
Apr. 1-10, 1955	Apr. 11-20	Apr. 21-30	May 1, 3-5, 7, 9-10.	May 6, 8	May 1-10	May 11-20	May 21-31	June 1-10	June 12, 14-15	June 11, 13, 16-20	June 11-20	June 21-30		July 1-10	July 11-20	July 21-31	Aug. 1-10	Aug. 11-13	Aug. 14-16	Aug. 12, 17-20	Aug. 11-20	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Ауетаде

### STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

### GENESEE RIVER AT SCIO, N. Y .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once daily measurement at approximately 6 p. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	48	39	39	34	38		64	64	80	82	72
2	74	46	39	38	34	38			68	81	85	73
3	70	45	37	38	34	40		64	70	83	83	75
4	70	45	36	38	34	41		70	75	84	80	75
5	65	47	36	36	34	40		70	76	84	85	74
6	62	48	32	35	34	39		55	78	82	83	73
7	60	48	33	35	38	34		65	72	84	79	70
8	57	48	34	35	38	35		60	62	78	78	79
9	58	48	40	35	40	41		58	68	84	78	69
10	64	48	39	38	43	45		56	72	86	77	73
11	68	48	38	36	35			64	66	81	75	69
12	70	48	40	36	33			65	65	80	78	68
13	70	48	39	35	34			65	62	80	70	66
14	70	48	40	35	35			68	63	80	73	68
15	68	47	36	35	38			69	72	80	79	71
16	58	48	36	35	38			68	75	82	80	73
17	55	53	35	35	40			66	78	84	80	74
18	55	58	36	35	39	}		65	80	80	75	76
19	53	59	35	35	42			64	77	82	80	76
20	55	57	32	35	44			67	78	82	83	71
21	55	48	32	35	38		60	70	78	82	83	67
22	57	45	32	39	34		61	70	77	83	78	65
23	59	47	35	37	36		60	72	75	78	75	64
24	58	45	36	35	37	\	55	76	75	79	73	63
<b>2</b> 5	60	44	35	35	38		53	72	72	81	75	62
26	60	43	37	37	37		50	70	68	81	74	63
27	55	42	38	32	38		50	75	70	78	73	60
28	55	46	36	34	39		55	78	75	77	75	63
29	5 <b>2</b>	42	35	35			56	73	75	80	77	63
30	52	49	35	34			58	66	76	82	75	65
31	48		40	35						84	75	
ver-	61	48	36	36	37	1	i	67	72	81	78	69
age	01	48	36	30	37			67	72	81	78	69

# STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

## GENESEE RIVER NEAR MOUNT MORRIS, N. Y.

DALAMGE AREA.—1,419 quare miles above gaging station.

DALAMGE AREA.—1,419 quare miles above gaging station.

DALAMGE AREA.—1,419 quare miles above gaging station.

DALAMGE AREA.—1,419 quare miles above gaging station.

Water temperatures: October 1954 to September 1955.

Water temperatures: October 1954 to September 1955.

Hardness: 1954-55:—Dissolved solids: Maximum, 479 ppm July 18-20; minimum, 128 ppm Mar. 1-8.

Hardness: Maximum, 216 ppm Mag. 15; minimum, 179 ppm July 18-20; minimum, 18-20 minimum, 18-20; minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20 minimum, 18-20

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Chemical	

	Mean	Silica		Cal-	Mag-	Sodium	Po- tas-	Bicar-	Sulfate	Chlo-	Fluo-	Nitrate	Dissolved solids (residue	Hardness as CaCO,	ress CO,	Specific conduct-	F	1	Oxygen	e q
Date of collection	discharge (cfs)	(\$102)	(Fe)	(Ca)	sium (Mg)	(Na)	Sium (K)	(HCO ₃ )	(so*)	(C1)	r)de (F)	(NO ₃ )	on evap- oration at 180°C)	Total	Non- carbon- ate	(micro- mhos at 25°C)	g 3.	COIO	Unfil- tered	Fil- tered
Oct. 1-4, 1954				;	;	34		91	30	51	;	9.0	;	104	30	328	.3	12	;	;
Oct. 5-10	461	5.1	ī	38	5.7	43	1.7	106	30	73	0.1	1.0	266	122	36	457	7.4	15	1	;
Oct. 1-10	:	-	0.17	;	1	1	Ī	;	1	;	!	1	;	;	;	;	1	;	;	;
Oct. 11-16, 19 ³	395	5.3	1	32	9.1	35	3.2	124	20	26	s.	٦.	260	119	18	424	8.8	12	;	;
Oct. 17-18, 20		- -	1	Į.	1	20		123	28	06	;	Ξ.	}	148	48	554	6.9	1	1	;
Oct. 11-20	:	1	. 26	;	1	1	-	;	;	;	;	1	;	;	;	;	;	:	:	!
Oct. 21-31	300	8.7	. 22	36	11	26	4.0	124	53	94	s.	1.0	325	136	32	572	7.3	S	1	;
VI 0 0 1		•		;				•					Č		•		t	_		
NOV. 1-3, 8-10		4.0	1	41	91	20		740	8	907	٥.		37.0	168	48	929	?	n	;	1
Nov. 6-7	318	1	1	ļ	:	86		164	39	175	1	-:	;	208	4.	908	7.3	;	;	;
Nov. 1-10	1	1	. 21	ţ	1	1	;	;	-		1	;	;	ì	;	;	;	;	1	ţ
Nov. 11-12	246	1	1	!	;	20		148	37	8.4	•	1.5	!	176	55	603	9.7	<b>&amp;</b>	1	;
Nov. 13-20		4.4	;	53	14	62	2.9	162	41	114	۳.	1.0	410	192	09	692	2.3	80	;	!
Nov. 11-20.	!	;	11.	ţ	1		1	1	;	;	:	1	;	;	;	:	;	;	:	;
Nov. 21-26		3.9	1	20	14	99	2.9	150	38	122	۳.	1.2	420	185	62	718	7.3	_	;	;
Nov. 27	27.2	;	;	ŧ	1	53		108	22	98	1	2.0	;	154	99	266	2.3	1	!	:
Nov. 28-30		-	1	1	1	34		102	56	26	;	1.8	!	116	32	376	2.2	9	;	;
Nov. 21-30	:	- -	 	;	;	:	;	!	-		;	;	:	1	-	1	1	;	;	;
a Contains 0.13 parts per million man	per million		ganese (Mn)																	

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued GENESEE RIVER NEAR MOUNT MORRIS; N. Y.--Continued

Fill-tered 11111111 1111111111 Oxygen consumed Unfil-tered Color 떮 Specific conduct-(micro-mbos at 25°C) 625 4469 445 286 286 192 274 259 carbon-72 47 50 35 35 31 34 Hardness as CaCO, Chemical analyses, in parts per million, water year October 1954 to September 1955 -- Continued Total 181 138 138 1138 117 117 100 100 on evap-oration at 180°C) solids (residue Nitrate (NO3) Fluo-ride (F) Chlo-ride (C1) Sulfate 245 342 31 31 31 25 32 33 33 35 35 35 35 35 1 22 2 1 2 3 2 2 1 2 3 2 2 1 Bicar-bonate (HCO₃) 86 4 1 2 2 2 3 1 10.2 Po-tas-sium (K) Sodium (Na) Mag-ne-sium (Mg) 1 1 1 1 8 Cal-cium (Ca) 36 : 1 : 23 : 1 : 31 : 28 1 18 1 Fe) Silica (SiO₂) Mean discharge (cfs) 1,926 6,280 2,640 1,020 268 268 256 621 1,920 3,570 9,950 4,920 4,300 6,500 2,590 6,420 2,920 Dec. 21.25.
Dec. 28-29
Dec. 28-29
Dec. 21.31
Dec. 21.31
Jan. 11.20
Jan. 21.27
Jan. 28-31 29-31.... 23, 24.... 25-28 7-10..... 1-8 ..... 11, 13, 14, 16-20 Date of collection 11-13. 14-16. Feb. Feb. Feb. Mar. Mar. Mar. Mar. Mar. Mar. Mar. Apr. Apr.

	1	3.0	8 4 1 1 2 2 2 2 1 1 1 2 2 2 2 2 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
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354 405 493 494 118 518 542 542 595 118	542 528  618 632 709 684	758 848 827 728	1, 450 1, 450 530 530 696 704 665
495   45   645	45 45 53 54 57	65 1 65 1 64 1	56 68 124 124 63 63 63 63 64 64
126 135 144 153 153 165 172	165 165 180 180 193 193	1180 1198 1190 200	192 164 216 216 159 179 206 191
208 240 282 111 141 111	344  352 339 381 375	446 479  448 397	247 312  299 385 412 374
8 8 8 1 1 1 1 1 8 8 8 1 1	1.5	1.5	1.1.2. 1.1.2.2. 2. 2. 1. 4. 1. 2. 2. 2. 2. 4. 1. 2. 2.
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\$ \$ \$ £ £ £ £ £ £ £ £ £ £ £ £ £ £ £ £ £	# !		194
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56 1 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	50 50 50 50 50 50 50 50 50 50 50 50 50 5	14.8 1882 1	4 8 1 1 4 8 8 8 8 8 8 8
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8.4. 8	2.6  3.7 5.5 9.7	40.00 80.00 80.00	80. 4.1.00.15.00.4
1,620 773 600 600 423 340 243 243 342	217 267 206 144 102 99	108 87 66 66	84 317 1,130  161 117 106 91
Apr. 21–30, 1955 May 1-7, 10. May 1-10 May 1-10 May 11–20 May 21–24, 28 May 21–24, 28 May 21–24, 28 May 21–27, 28 May 21–21 May 21–21 May 21–31	June 1, 2, 4-10. June 3. June 1-10. June 11-20. June 21-30. July 1, 4, 7, 8. July 2, 3, 5-6, 9-10.	July 1-10 July 11-17 July 18, 19, 20 July 11-20 July 22-24, 27, 28 July 25, 26, 29-31 July 21-31	Aug. 1-10. Aug. 11-14, 16-20. Aug. 13. Aug. 11-20. Aug. 21-31. Sept. 11-10. Sept. 11-20. Average

### STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

### GENESEE RIVER NEAR MOUNT MORRIS, N. Y .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 /Once-daily measurement at approximately 6 a.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65		39	35	32	33	44	69	63	73	79	69
2	66	45	37	36	32	36	46	59	64		79	68
3	66	44	34	37	32	36	49	60	62	76	78	67
4	68	41	32	37	31	35		61	63	77	81	68
5	64	40	32	35	31	36	44	66	65	78	80	70
6	62	40		35	34	37	48	63	69	78	81	67
7	58	41	33	35	34	36	50	57	70	76	79	68
8	54	40	33	33		36	49	57	70	76	70	
9	55	41	34	33	34		43	55	69	76	71	63
10	54	40	33	33		38		53	68	77	73	65
	)	1	i	1	}	30	}	1	00	1	Į.	05
11	54	40	44	32	34	48	54	53	70	76	73	70
12	56	40	33	32	33	45	55	55	68	73	73	70
13	62	39	34	32	32	43		58	69	75	72	70
14	62	41	32	32	33		56	60	65	72	72	70
15	65	40		32	34	45	57	59	65	77	72	71
16	60	39	34	33	33	45		60	68		73	72
17	58	41	34	33	34	45	55	58	70	78	74	73
18	59	43	34	32	31	38	53	58	71	79	76	73
19	50	49	33	32	33	46	57	59	70	78	76	75
20	54	54	32	32	35			57	71	77	77	68
20	J-1	3*	32	32	35			57	71	"	111	0.6
21		49	31	31	34		57	59	73	75	76	60
22	48	45	32	32		41	58		73	77	79	59
23	48	45	32	34	33	40	56	68	70	79	76	58
24	50	42	32	32	34	39		66	70	77	72	61
<b>2</b> 5	50	40	32	32		40	54	70	70	74	71	60
26	50	39	33	32	33	40	52	68	69	73	71	68
27	50	38	33	32	35	36	49	65	69	74	74	70
28	50	39	33		34	34	50	70	67	73	70	70
29	50	39	33	32	37	36	54	71	70	74	70	67
30	50	40	34	31	1	36	52		70	74	75	72
31	30	40	35	31				68				
		<del></del>	30	31		40	<u></u>		ļ <u></u>	76	72	<del> </del> -
Aver- age	57	42	34	33	33	39	52	61	68	76	75	68

# STREAMS TRIBUTARY TO LAKE ONTARIO -- Continued

# GENESEE RIVER AT DRIVING PARK AVENUE AT ROCHESTER, N. Y.

LOCATION . -- On right bank at gaging station at Rochester, Monroe County, at plant 5 of Rochester Gas and Electric Corp., and 60 feet upstream from Driving

Park Avenue Bridge.

DARIANGE REEA. -2,467 square miles.

RECORDS ANALIABLE. --2,67 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. -2,667 square miles.

RECORDS ANALIABLE. SECONDARY ANALIAM.

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REMARKS. --Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year october 1954 to September 1955 given in WSP 1387.

	Oxygen	l- Fil-	:	;	:	:	;	:	:	:	:	:		:	:	:	:	:	:	;	: 		:	:	:	:	:	:	:
		Unfil- tered		•	· 	•	•	í 	•	•	:	:		•	•	•	•	•	'	•			_	-	'	1	'	'	
		Color	14	:	2	;	2	28	;	13	1	80	•	•	-	_	!	!	9	•	9	ĸ	•	≘ 	αc	:	1	17	:
		Hd.	7.4	7.2	7.4	:	7.7	7.1	:	2.5	7.4	7.5		- 1	5.	7.	7.5	:	7.5	7.4	7.5	•	- 1	7.4	4.	:	7.4	7.5	!
	Specific conduct-	(micro- mhos at 25°C)	506	486	572	:	581	452	:	682	631	669	170	140	682	582	327	:	402	490	576	724	2 1	198	626	:	290	403	;
	Hardness as CaCO,	Non- carbon- ate	102	95	116	:	122	97	:	148	138	156	•	747	140	133	63	;	82	103	121	143	701	160	118	;	115	72	:
955	Hard as C	Total	200	196	225	:	236	192	:	278	270	296	222		279	262	136	;	168	207	240	906	000	306	240	:	239	161	:
Chemical analyses, in parts per million, water year October 1954 to September 1955	Dissolved solids	on evap- oration at 180°C)	308	i	384	:	397	:	;	467	406	440	,	419	456	390	:	;	257	341	397	200	070	:	394	;	;	295	;
954 to S	Nitrate	(NO ₃ )	1.8	2.0	5.0	:	5.0	7.0	;	18	3.0	3.0	•		2.0	2.0	0.9	;	0.9	4.5	4.5	4	2	2.0	4.8	;	4.2	3.8	:
ctober 1		ride (F)	0.2	;	4.	:	4.	;	;	٣.	٦.	Τ:		 -:	-:	-:	;	;	-:	-:	Ξ.	c	•	;	-:	!	:	0.	;
ter year O	Сию-	ride (C1)	44	41	20	1	47	53	;	90	53	24	5	20	26	46	25	;	28	35	39	o u	3	8	93	;	49	34	:
llion, wa	Sulfate	( <b>*</b> 0s)	91	75	120	;	127	74	;	138	127	146		132	132	116	26	:	15	94	115	2	2	144	104	;	97	61	:
ts per mi	Bicar-	bonate (HCO ₃ )	120	127	134	:	140	116	:	158	161	171	ţ	165	169	157	06	-	102	127	145	944	110	178	159	;	151	108	:
es, in par	Po- tas-	Sium (K)	1.8	23	2.4	:	2.9	12	;	2.7	2.6	2.4		7	2.1	1.8	9	:	1.5	2.1	2.2	c	5.7	6	6.5	;	2,1	1.9	;
cal analys	Sodium	(Na)	24		36	1	34	•	;	41	27	31	į	7.7	31	20		:	14	17	23	8	90	_	33	:	~	18	:
Chemi	Mag- ne-	sium (Mg)	12	1	14	1	16	1	!	15	15	19	,	18	18	18	!	:	11	12	15		ŝ	:	19	:	:	8.6	:
	Cal-	(Ca)	8	1	67	;	89	:	;	98	83	87	3	81	82	75	:	1	49	28	E	ä	AI.	:	£.	:	;	20	: :
		(Fe)	0.16	;	;	20	1	:	.25	1.6	.31	. 19	į	2	.33	:	;	.37	.71	. 26	.30		01.	;	:	.22	:	;	.37
	<b>=</b>	(SiO ₂ )	1.5	:	4.5	:	10	:	:	5.9	6.1	3.8		٠ د	4.9	5.6	ŀ	:	8.8	5.4	2.0	,		:	4.9	;	:	6.0	1
	Mean	discharge (cfs)			1,070				;			931		1,060	2, 120	2,820	11,600	;	4.600	1,980	1,060	20	ORC	1,200	1,230	:	2.960	4,850	1
	:	Date of collection	Oct. 1-10, 1954	Oct. 11	Oct. 12-20	Oct. 11-20	Oct, 21-26, 28-31	Oct. 27	Oct. 21-31	Nov. 1-10.	Nov. 11-20	Nov. 21-30		Dec. 1-10	Dec. 11-20	Dec. 21-30	Dec. 31	Dec. 21-31	Jan. 1-10, 1955	Jan. 11-20	Jan. 21-31	-	rep. 1-10	Feb. 11-12	Feb. 13-20	Feb. 11-20	Feb. 21-23	Feb. 24-28	Feb. 21-28

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued GENESEE RIVER AT DRIVING PARK AVENUE AT ROCHESTER, N. Y.--Continued

				Cher	mical an	alyses, ii	n parts pe	r million,	water ye	ar Octobe	ar 1954 t	o Septem	Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	Continued						
:		Silica		Cal-	Mag-	Sodium	Po- tas-		Sulfate	Chlo-		Nitrate	Dissolved solids	Hardness as CaCO ₃	less CO ₃	Specific conduct-			Oxygen consumed	n led
Date of collection	discharge (cfs)	(S10 ₂ )	(Fe)	(Ca)	sium (Mg)	(Na)	Sium (K)	(HCO ₃ )	(³os)	(CI)	(F)	(NO ₃ )	on evap- oration at 180°C)	Total	Non- carbon- ate	(micro- mhos at 25°C)	H.	Color	Unfil- tered	Fil- tered
Mar. 1-3, 10, 1955	L	:	1	:	:		6	112	46	19	:	5.8	:	144	25	335	7.4	:	1	۱,
Mar. 4-9.	13,900	4.2	;	34	4.9	8.6	1.8	8	37	16	0.0	4.2	195	106	9	257	7.4	18	1	;
Mar. 1-10		1	0.32	;	:	;	:	:	ŧ	1	;	;	i	:	:	:	;	:	;	;
Mar. 13, 14		1	1	;	!	_	.0	68	41	14	;	5.9	:	116	43	271	4.	;	1	;
Mar. 11, 12, 15-20	6,080	5.2	1	47	9.5	14	1.7	113	57	24	-:	4.0	267	157	64	365	7.3	14	;	ł
Mar. 11-20		;	9	;	:	;	:	{	:	:	:	;	;	;	:	;	;	:	;	:
Mar. 23, 24		;	;	1	:	-		106	48	19	:		1	140	53	324	5.	;	:	:
Mar. 21, 22, 25-31		4.6	1	51	10	15	1.7	119	65	92	-:	5.9	281	169	11	397	8.1	12	;	;
Mar. 21-31		1	-14	;	1	;	:	;	!	:	;	;	;	1	:	;	;	:	;	:
1,10	080	9	40	r i	:	7	•	137	r.	28	•	~ ~	280	104	84	45.6	α.	4	-	;
Apr. 1-10.	, ,	9	2	5 6	3:	<b>.</b>		701	3 6	9 6	9.0	9 4	946	104	5 2	90		3 2	}	: ;
Apr. 11-20	3, 140	9 6	<b>\$</b> 7.	9	<b>*</b> ;	9 9	2.0	201	200	8 8	•		240	177	700	900		3 5	1	:
Apr. 21-27	3, 440	 	:	9.	14	10	0.2	801	90	87	-		30.	622	88	170	- I	= ;	;	;
Apr. 28-30		:	: :	;	;	_	87.	142	10	47	:	0.1	;	861	82	440	6.	Ξ	1	:
Apr. 21-30		:	.23	;	1	;	:	1	:	:	;	:	1	;	1	;	;	1	;	ť
May 1-6, 8, 10		2.2	:	65	14	16	2.1	159	88	28	<u> </u>		340	221	93	210	2.5	17	1	1
May 7, 9		1	:	;	:	_	- 2	a 169	85	58	:	o,	;	238	106	529	4.		:	1
May 1-10		1	.17	;	:	;	;	;	;	;	:	;	:	:	!	;	;	:	1	;
May 11, 13-20	1,450	2.4	1	67	14	22	2.0	161	83	8	0.	۰.	386	225	င္ပ	549	9.	æ	:	:
									-	-		-			;	573				
May 12		:	: :	1	:	_	77	corq	 6	8	ŀ	79.	:	720	111	7	*	;	:	¦
May 11-20		1	77	; ;	:	1	1	11	13	1 3	! '	; '	: 5	, ,		; {	; ;	! 9	:	<b>:</b>
May 21-31		æ.	.10	69	14	21	2.0	157	96	98	o.	7	282	027	102	000	0	0 !	1	ŀ
June 1-6, 8-10		7.7	ŀ	99	15			155	85	43	7	7.4	371	227	001	228	m.	12	1	!
June 7		:	:	;	:		28	154	94	#	1	1.2	:	232	106	262	89	14	;	1
June 1-10		1	60.	;	:	;	;	;	;	;	:	;	:	!	;	;	;	:	1	;
June 11-20		9.7	.14	99	12	22	2.5	148	98	40	7	1.4	349	214	93	525	.5	12	1	ł
June 21-30	220	3.7	8	61	11	22	2.0	138	16	40	4.	1.4	312	198	84	499	4.	က	4.7	5. S
•		_									,	,		-			-	-	-	
July 1-10		4.1	.15	61	=	22	8.1	136	16	40	.7	20 1	311	18.	201	200	ب ا د	· · ·	9 6	a. (
July 11-20		8.7	2.	61	2	26	4.6	144	8	43	2.	2.0	332	193	- C (2)	534	~ 1		20.0	N 0
July 21-31		1.5	.28	09	12	24		138	22	42		0.0	319	198	200	216	-	· ·	- 0	20 C
Aug. 1-10		1.7	.27	26	7.2	22	2.1	112	8	<b>\$</b>	×.	6:	298	169	20.0	489	4 0	N 6	0.0	٥.
Aug. 11-15, 17-20	750		1	63	12		2.6	134	8 5	99	<del>-</del> -	 	356	219	60 6	622	٥.٠	Ω		4.1
Aug. 17		۰ :	- -	1	: -:	_	78	165	100 100	- 8.	:	:	- !	0.56	conz	0.0	2	-	-	:
a Included administration of	f A name non	million		Junate (C)	2															

a Includes equivalent of 4 parts per million of carbonate  $(CO_3)$ . b Includes equivalent of 6 parts per million of carbonate  $(CO_3)$ .

;	2.3	!	;	2.0	2.2	1.8	:
;	4.7	:	1	4.3	89.	4.2	:
:	ഹ	;	;	~	~	2	12
:	7.5	7.3	1	7.3	3.6	7.3	1
1	523	343	:	467	494	525	522
:	88	48	;	7.1	84	88	100
;	194	180	:	185	194	204	214
;	313	;	;	273	293	307	349
:	2.2	3.0	;	7.7	8.7	3.4	3.4
;	~!	1	1	~!	e,	~?	0.1
:	22	42	;	88	44	46	_
:	72	65	!	65	73	18	08
;	130	124	1	132	135	136	Γ-
:	2.6		;	2.3	2.5	2.5	2.2
-	30	23	;	22	24	26	24
:	12	1	;	=	17	12	13
1	28					62	65
.18	;	;	.13	10	.18	.10	0.28
1	4.8	:	;	8.2	5.9	2.7	4.6
:	292	525	;	452	459	441	2,080
Aug. 11-20, 1955	Aug. 21-25, 27-31	Aug. 26	Aug. 21-31	Sept. 1-10	Sept. 11-20	Sept. 21-30	Average

### STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

### GENESEE RIVER AT DRIVING PARK AVENUE AT ROCHESTER, N. Y .-- Continued

Temperature (°F) of water, water year October 1954 to September 1955 Once-daily measurement at approximately 10:30 a.m. 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	50	42	37	34	37		58	68	75	80	73
2	66	50	41	36	33	37		59	70	76	82	73
	67	49	41	37	33	37		60	68	76	82	73
3 4	67	47	40	38	33	43		63	68	76	83	73
5	66	47	40	37	34	41		63	70	77	83	73
6	65	46	39	36	36	37		66	70	75	83	72
7	62	45	37	36	36	37		65	71	78	81	71
8	58	46	35		37	36		61	71	79	78	69
9	60	45	35	34	36	34		61	70	82	80	72
10	60	45	36	34	36	36		60	70	80	76	70
11	62	45	35	33	37	44	50	60	70	77	77	70
12	62	46	35	34	37	44	52	58	70	75	77	67
13	63	45	35	34	34	45	53 55 56	60	71	78	76	67
14	63	45	35	34	38	41	55	62	68	77	76	68
15	64	44	35	34	35	42	56	61	69	79	76	68
16	63	44		34	35	43	56	62	68	79	76	68
17	61	45	34	34	34	40	55	61	69 73	79	78	69
18	59	47	35	34	35	39	54	62	73	78	78	70
19	57	48	35	33	35	39	56 55	62	73	78	78	70
20	57	48	34	38	37	39	55	63	73	77	78	70
21	56	48	34	33	36	40	57	63	75 75	77	79	68 68
22	56	47	35	34	37	41	57	64	75	79	80	68
23	56	46	35	37	35	42	57	65	74	81	78	68
24	56	47	35	35	35	42	57	66	74	80	78	67
25	56	47	35	36	36	45	56	68	74	78	77	67
26	55	46	35	35	36	42	55	67	72	78	77	66
27	55	46	35	35	36	40	52	67	73	78	75	65
28	53	45	36	35	36	37	53	69	73	77	74	65 65
29	54	44	37	34		32	55	70	75	77	73	65
30	53 52	43	37 37	34		38	57	68	75	78	76 73	66
31	52	<u> </u>	37	34		39		68		80	73	<del> </del> -
Aver- age	60	46	36	35	35	<u>L</u>		63	71	78	78	69

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STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

# MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO LAKE ONTARIO IN NEW YORK

	Color	
	Hd	
	Specific conduct- ance (micro- mhos at 25°C)	
	Hardness as CaCO ₃ Calcium Non-mag-carbon-nesium ate	
	Dissolved solids (residue on evaporation at 180°C)	
ber 1955	Nitrate (NO ₃ )	
chemical analyses, in parts per million, water year October 1954 to September 1955	Chloride Fluoride Nitrate (C1) (F) (NO ₂ )	
ctober 1954		
ter year Oc	Sulfate (SO ₄ )	
nillion, wa	Bicar- bonate (HCO ₃ )	
parts per n	Potas- sium (K)	
alyses, in	Sodium (Na)	
emical an	Mag- nesium (Mg)	
ວິ	Cal- clum (Ca)	
	Fe)	
	Silica (SiO ₂ )	
	Dis- charge (cfs)	
	Date of collection	

DEER RIVER AT COPENHAGEN	Apr. 25, 1955 286 1.6 0.43 11 1.5 2.0 1.7 34 9.2 1.2 0.3 1.9 Aug. 17	BLACK RIVER AT GREIG	Apr. 25, 1965 5, 100 4, 5 0, 06 6, 0 0, 5 1.4 0, 8 11 9, 9 1.2 0, 2 1.5 Arg. 16	BLACK RIVER AT CASTORLAND	Apr. 26, 1955 7,340 5,2 0.03 5,2 0.6 1.1 0.8 10 8.1 0.8 0.0 0.8 Apr. 1670 4.8 44 4.2 9 1.5 6 1.1 0.8 14 6.2 5 0 1.0
	1 1		1 1		

a Daily mean discharge.

# STREAMS TRIBUTARY TO ST. LAWRENCE RIVER BASIN

MISCELLANBOUS ANALYSES OF STREAMS TRIBUTARY TO ST. LAWRENCE RIVER IN NEW YORK

				٦	Chemical	analyses	i, in parts	per mill	ion, water	Chemical analyses, in parts per million, water year October 1954 to September 1955	ber 1954 t	o Septembe	er 1955						
	Mean	Tem-	201110		_	Mag-	100	Potas-	Bicar-	Gulfate	Chloride	Chloride Fluoride	oter#N	Dissolved	Hardness as CaCO,	. co	Specific conduct-		
Date of collection		ture (°F)	(SiO ₂ )	(Fe)	ctum (Ca)	nesium (Mg)	(Na)	stum (K)	bonate (HCO ₃ )	(so*)	(CI)	(F)		(residue on evap- oration at 180°C)	Total	Non- carbon- ate	ance (micro- mhos at 25°C)	Hd	Color
						ST	. LAWREN	CE RIVI	ER NEAR	ST. LAWRENCE RIVER NEAR ALEXANDRIA BAY	IA BAY								•
Apr. 26, 1955			1.5	0.03	33	6.2	14 9.1	1.6	108	24	22 21	0.1	7.	183 170	108	19 35	297 301	8.1	e 10
						EAST B	RANCH OS	WEGATOR	HIE RIVE	EAST BRANCH OSWEGATCHIE RIVER NEAR OSWEGATCHIE	SWEGATCE	IE							
Apr. 25, 1955	1,840		5.0	0.27	6.1	0.7 8.	1.8	0.9	6 18	9.4	1.5	0.0	1.5	36	13	8 4	36. 1 72. 5	6.6	12
							OSWEGAT	CHIE R	IVER NEA	OSWEGATCHIE RIVER NEAR HEUVELTON	TON							•	
Apr. 26, 1955	4, 010 496		4.4 1.3	0.22	9.5	2.1	1.6	1.2	36 36	11	1.0	0.0	1.5	57	32		67.9 101	7.1	30
							ST. LA	RENCE 1	RIVER AT	ST. LAWRENCE RIVER AT ODGENSBURG	URG							•	
Apr. 26, 1955			1.6	0.08	35 36	1.6	12 9.0	1.4	104	22 24	9.5 20	0.1	0.4	160 165	94 122	32	278 294	8.1	5 -
							5	ASS RI	GRASS RIVER AT PYRITES	PYRITES									
Apr. 26, 1955	1,590		4.1	0.13	4.0	1.1	1.2	1.0	11 25	8.3	1.8	0.2	1.3	4	14 26	8 9	37.3 65.3	6.9	50 28
							5	ASS RIV	GRASS RIVER AT MASSENA	AASSENA									
Apr. 27, 1955	2,060 225		8.8 8.8	0.16	10 12	4.6	1.0	9.6	39 51	12 9.4	1.0	0.2	1.3	69	44 50	12 8	90.9	7.2	50

ST. LAWRENCE RIVER NEAR MASSENA

Apr. 27, 1955		1.4	0.07	37	6.7	9.2	1.6	109	92	22	0.0	9.0	192	120	30	290 301	8.0	8 8
						RA	QUETTE R	LIVER AT	RAQUETTE RIVER AT PIERCEFIELD	IELD								
Apr. 25, 1955	6,720 282	3.5	0.04	4.0 3.1	1.4	1.0	6.9 8.	മ	9.2	1.2	0.0	1.2	32	12	8 7	28.7 34.0	6.5	22 8
						RA	QUETTE 1	UVER AT	RAQUETTE RIVER AT RAYMONDVILLE	VILLE								
Apr. 26, 1955	7,190 1,650	1.0	0.04	4.0 6.4	0.8 2.0	1.4	9. 9.	9	8.0 9.8	1.0	0.1	1.1	39	13	10	36.5	6.5	25 27
						ST.	REGIS RI	VER AT	ST. REGIS RIVER AT BRASHER CENTER	CENTER								i
Apr. 26, 1955	2,580	5.7	0.12	8.8 8.8	3.1	1.4	6.0 8.	18	8.3 6.2	0.8	0.0	1.5	45 52	8 20	e 0	47.8	7.3	38
					DE	ER RIVER	AT BRAS	SHER IRC	DEER RIVER AT BRASHER IRON WORKS, ST. LAWRENCE	ST. LAWR	ENCE							
Apr. 27, 1955	381 151	5.4	0.14	11	3.1	1.4	1.0	43	9.0	1.2	0.1	1.3	67 75	<b>6</b> 9	14	107	7.3	40 40
						ri ri	TTLE SAI	MON RIV	LITTLE SALMON RIVER AT BOMBAY	MBAY								
Apr. 27, 1955	155 56.2	6.2	0.34	12 18	3.7	2.4	1.2	49 60	13	0.8 2.0	0.1	1.3	74 90	45	20	105 148	7.7	20 12
						ω	ALMON RI	IVER AT	SALMON RIVER AT CHASM FALLS	TTS								
Aug. 27, 1955	474 159	6.4 9.1	0.35	8.8 8.8	1.4	1.3	9.0	15 38	7.5	1.5	0.1	1.3 8.	45	8 8	20 73	41.3	6.9	35

STREAMS TRIBUTARY TO ST, LAWRENCE RIVER BASIN -- Continued

# MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO ST. LAWRENCE RIVER IN NEW YORK--Continued

		Color		35 25		12 7		18		22		18		30		15 37	
		Ηα		7.1		7.4		7.3 6.9		7.6		7.5		6.9		6.8	
	Specific conduct-	ance (micro- mhos at 25°C)		52. 1 78. 3		78.8 149		69.0 91.2		89.8 146		84.3 103		49.8 96.4		47.1 88.2	
	Hardness as CaCO ₃	Non- carbon- ate		9		6 12		r- 80		11 3		4 ro		10		8 22	
	Hardness as CaCO,	Total		38		33		26 42		38		36 45		24		118	
per	Dissolved solids	(residue on evap- oration at 180°C)		48 55		59		63 55		70 89		61		55		56	
5Continu	Ntrate	(NO ₃ )		1.0		9.6		1.3		4.1		9.0		1.6		1.4	
ember 195	Fluoride	(CI) (F)		0.0		0.0		0.2	52	0.1		0.0		0.1		0.1	
54 to Sept	Chloride	(CI)		1.2		0.8	NUGAY	1.0	ELLENBURG	0.8 2.0	ILLS	2.2	æ	0.8	ORKS	1.2 5.2	
Chemical analyses, in parts per million, water year October 1954 to September 1955 Continued	Sulfate	(so*)	SALMON RIVER AT MALONE	8.1 7.0	TROUT RIVER AT CONSTABLE	11	CHATEAUGAY RIVER NEAR CHATEAUGAY	12 9.5	CHAZY RIVER AT	==	AT PERRY MILLS	9.2	SARANAC RIVER AT PLATTSBURG	11	AUSABLE RIVER NEAR AUSABLE FORKS	=	
ater year	Bicar-	bonate (HCO ₃ )	RIVER A'	20 40	VER AT	33	IVER NE	24 41	CHAZY	42	RIVER A	39 49	VER AT	13	R NEAR	12	
illion, w	Potas-	sium (K)	SALMON	0.9	OUT RI	1.0	UGAY R	4.6	I GREAT	1.1	CHAZY	1.1	NAC RI	0.9	E RIVE	1.0	
arts per m	Sodium	(Na)	0,	1.2	T	2,2	CHATEA	1.9	NORTH BRANCH GREAT	1.8	GREAT	1.5	SAR	2.8	AUSABI	1.8	
ses, in pa	Mag-	nesium (Mg)		3.2		5.7		1.1	NORT	1.9		3.0		3.0		2.0	
al analy	Cal-	cium (Ca)		6.0 10		9.1 19		8.7 12		12 20		10		1.1		6.0	
Chemi	Long	(Fe)		0.14		0.35		0.14		0.10 .08		0,21		0.24		0.08	
	Silica	(SiO ₂ )		6.9		5.8		6.0 4.		7.0		3.4		6.5		9.0	
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		Date of collection		Apr. 28, 1955		Apr. 28, 1955		Apr. 27, 1955		Apr. 28, 1955		Apr. 27, 1955		Apr. 27, 1955		Apr. 27, 1955	15

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Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 168   Sodium and potassium 119   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Atlantic slope basins, James River to Savannah River 284-304   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va 103-105 near Petersburg, W. Va 102   South Buffalo Creek near Greensboro, N. C. 239   South Canal near Vero Beach, Fla. 275   South Canal near Vero Beach, Fla. 275   South Fork Licking River at Cynthiana, Ky 395	Upper Broad Creek at Olympia, N. C. 225 near Olympia, N. C. 225 Uwharrie River near Eldorado, N. C. 256  V  Vanceboro, N. C., Neuse River near (Cowen Landing)
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 16   Sodium and potassium 11   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va. 103-105   near Petersburg, W. Va. 103-105   near Petersburg, W. Va. 102   South Buffalo Creek near Greensboro, N. C. 239   South Fork Licking River at Cynthiana, Ky. 395   South Fork Massie Creek near Cedarville, Ohio 375-379   South Fork New River near Jefferson, N. C. 348   South Fork New River near Jefferson, N. C. 348	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C.	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 16   Sodium and potassium 11   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va. 103-105   near Petersburg, W. Va. 103-105   near Petersburg, W. Va. 275   South Ganal near Vero Beach, Fla. 275   South Fork Licking River at Cynthiana, Ky. 395   South Fork Massie Creek near Cedarville, Ohio 375-379   South Fork New River near Jefferson, N. C. 348   South Fork New River near Jefferson, N. C. 348   South Fork New River near Jefferson, N. C. 348   South Fork Shenandoah River at Front Royal, Va. 107-112   South New River Canal at Davie, Fla. 290	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C.	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 168   Sodium-adsorption-ratio 171   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va. 103-105   near Petersburg, W. Va. 103-105   near Petersburg, W. Va. 103-105   South Buffalo Creek near Greensboro, N. C. 239   South Canal near Vero Beach, Fla. 275   South Fork Licking River at Cynthiana, Ky. 395   South Fork Massie Creek near Cedarville, Ohio 375-379   South Fork New River near Jefferson, N. C. 348   South Fork Shenandoah River at Front Royal, Va. 107-112   South New River Canal at Davie, Fla. 290   South River near Parkersburg, N. C. 235   South Yadkin River at Cooleemee, N. C. 255   near Mocksville, N. C. 255	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C. 177	Upper Broad Creek at Olympia, N. C. 225 near Olympia, N. C. 225 Uwharrie River near Eldorado, N. C. 256  V  Vanceboro, N. C., Neuse River near (Cowen Landing)
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 468   Sodium-adsorption-ratio 16   Sodium and potassium 11   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va 103-105   near Petersburg, W. Va 103-105   near Petersburg, W. Va 103-05   South Ganal near Vero Beach, Fla 275   South Fork Licking River at Cynthiana, Ky 395   South Fork Licking River at Cynthiana, Ky 395   South Fork Mew River near Jefferson, N. C 348   South Fork New River near Jefferson, N. C 348   South Fork Shenandoah River at Front Royal, Va 107-112   South River near Parkersburg, N. C 235   South Yadkin River at Cooleemee, N. C 255   Specific conductance 148   Stony Creek at Goldsboro, N. C 224	Upper Broad Creek at Olympia, N. C. 225 near Olympia, N. C. 225 Uwharrie River near Eldorado, N. C. 256  V  Vanceboro, N. C., Neuse River near (Cowen Landing)
Smith River at Spray, N. C. 177	Upper Broad Creek at Olympia, N. C
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Smith River at Spray, N. C.         177           Smithfield, N. C., Neuse River at         189-191           Smithfield, N. C., Cumberland River at         468           Sodium-adsorption-ratio         16           Sodium and potassium         11           Sodium and potassium         11           South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River         264-304           South Atlantic slope basins, James River to Savannah River         144-263           South Bay, Fla., North New River Canal at         288           South Branch Potomac River at Romney, W. Va.         103-105           near Petersburg, W. Va.         102           South Branch Potomac River at Romney, W. Va.         102           South Branch Potomac River at Romney, W. Va.         103-105           near Petersburg, W. Va.         102           South Fork Licking River at Cynthiana, Ky.         395           South Fork Licking River at Cynthiana, Ky.         395           South Fork Massie Creek near Greensboro, N. C.         348           South Fork New River near Jefferson, N. C.         348           South Fork Shenandoah River at Front         Royal, Va.         107-112           South New River Canal at Davie, Fla.         290           South Yadkin River at Cooleemee, N. C.	Upper Broad Creek at Olympia, N. C. 225 near Olympia, N. C. 225 Uwharrie River near Eldorado, N. C. 256  V  Vanceboro, N. C., Neuse River near (Cowen Landing)
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 16   Sodium and potassium 111   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va 103-105   near Petersburg, W. Va 103-105   near Petersburg, W. Va 103-105   South Buffalo Creek near Greensboro, N. C. 239   South Canal near Vero Beach, Fla 275   South Fork Licking River at Cynthiana, Ky 395   South Fork Licking River at Cynthiana, Ky 395   South Fork Massie Creek near Cedarville, Ohio 375-379   South Fork New River near Jefferson, N. C. 348   South Fork Shenandoah River at Front Royal, Va 107-112   South New River Canal at Davie, Fla 290   South River near Parkersburg, N. C. 235   South Yadkin River at Cooleemee, N. C. 255   Specific conductance 14   Stony Creek at Goldsboro, N. C. 224   near Burlington, N. C. 239   Streams tributary to Lake Erie 492-509   Streams tributary to Lake Huron 482-491   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C.         177           Smithfield, N. C., Neuse River at         189-191           Smithfield, N. C., Neuse River at         468           Sodium-adsorption-ratio         16           Sodium and potassium         11           Sodium and potassium         11           South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River         264-304           South Atlantic slope basins, James River to Savannah River         144-263           South Bay, Fla., North New River Canal at         28           South Bay, Fla., North New River Canal at         28           South Branch Potomac River at Romney,         W. Va         103-105           near Petersburg, W. Va         102           South Buffalo Creek near Greensboro, N. C.         239           South Fork Licking River at Cynthiana, Ky         395           South Fork Massie Creek near Cedarville,         0hio         375-379           South Fork New River near Jefferson, N. C.         348           South Fork Shenandoah River at Front         Royal, Va         107-112           South How River Canal at Davie, Fla.         290           South Yadkin River at Cooleemee, N. C.         235           South Yadkin River at Cooleemee, N. C.         255           near Burlington, N.	Upper Broad Creek at Olympia, N. C
Smith River at Spray, N. C. 177   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithfield, N. C., Neuse River at 189-191   Smithland, Ky., Cumberland River at 468   Sodium-adsorption-ratio 16   Sodium and potassium 111   South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River 264-304   South Atlantic slope basins, James River to Savannah River 144-263   South Bay, Fla., North New River Canal at 288   South Branch Potomac River at Romney, W. Va 103-105   near Petersburg, W. Va 103-105   near Petersburg, W. Va 103-105   South Buffalo Creek near Greensboro, N. C. 239   South Canal near Vero Beach, Fla 275   South Fork Licking River at Cynthiana, Ky 395   South Fork Licking River at Cynthiana, Ky 395   South Fork Massie Creek near Cedarville, Ohio 375-379   South Fork New River near Jefferson, N. C. 348   South Fork Shenandoah River at Front Royal, Va 107-112   South New River Canal at Davie, Fla 290   South River near Parkersburg, N. C. 235   South Yadkin River at Cooleemee, N. C. 255   Specific conductance 14   Stony Creek at Goldsboro, N. C. 224   near Burlington, N. C. 239   Streams tributary to Lake Erie 492-509   Streams tributary to Lake Huron 482-491   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481   Streams tributary to Lake Michigan 477-481	Upper Broad Creek at Olympia, N. C

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